



# CERTIFICATE

**Issued Date: May. 09, 2008**  
**Report No.: 084061R-ITCEP07V04**

This is to certify that the following designated product

**Product : Notebook**  
**Trade name : MSI**  
**Model Number : MS-1644, PR621, PR621X**  
**Company Name : MICRO-STAR INT'L Co., LTD.**

This product, which has been issued the test report listed as above in QuieTek Laboratory, is based on a single evaluation of one sample and confirmed to comply with the requirements of the following EMC standard.

**EN 55022: 2006**

**EN 61000-3-2: 2000 + A2: 2005**

**EN 61000-3-3: 1995 + A1: 2001**

**EN 55024: 1998+A1: 2001+A2: 2003**

**IEC 61000-4-2 Edition 1.2: 2001-04**

**IEC 61000-4-3: 2002+A1: 2002**

**IEC 61000-4-4: 2004**

**IEC 61000-4-5 Edition 1.1: 2001-04**

**IEC 61000-4-6 Edition 2.1: 2004-11**

**IEC 61000-4-8 Edition 1.1: 2001-03**

**IEC 61000-4-11 Second Edition: 2004-03**

TEST LABORATORY

Vincent Lin / Deputy Manager



## Test Report

Product Name : Notebook

Model No. : MS-1644, PR621, PR621X

Applicant : MICRO-STAR INT'L Co., LTD.

Address : No. 69, Li-De St., Jung-He City, Taipei Hsien,  
Taiwan, R.O.C.

Date of Receipt : 2008/03/31

Issued Date : 2008/05/09

Report No. : 084061R-ITCEP07V04

Version : V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, NVLAP or any agency of the Government.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

# Declaration of Conformity

The following product is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (2004/108/EC). The listed standards as below were applied:

The following Equipment:

Product : Notebook  
Model Number : MS-1644, PR621, PR621X  
Trade Name : Notebook

This product is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (2004/108/EC). For the evaluation regarding EMC, the following standards were applied:

## **RFI Emission:**

EN 55022: 2006, Class B : Product family standard  
EN 61000-3-2:2000+A2: 2005, Class D : Limits for harmonic current emission  
EN 61000-3-3:1995+A1: 2001 : Limitation of voltage fluctuation and flicker in low-voltage supply system

## **Immunity:**

EN 55024:1998+A1: 2001+A2: 2003 : Product family standard

The following importer/manufacturer is responsible for this declaration:

Company Name : \_\_\_\_\_  
Company Address : \_\_\_\_\_  
Telephone : \_\_\_\_\_ Facsimile : \_\_\_\_\_

Person is responsible for marking this declaration:

\_\_\_\_\_  
Name (Full Name)

\_\_\_\_\_  
Position/ Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Legal Signature

# CE

## Statement of Conformity

This certifies that the following designated product:

Product : Notebook  
Model Number : MS-1644, PR621, PR621X  
Trade Name : Notebook  
Company Name : MICRO-STAR INT'L Co., LTD.

This product is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (2004/108/EC). For the evaluation regarding EMC, the following standards were applied:

### RFI Emission:

EN 55022: 2006, Class B : Product family standard  
EN 61000-3-2:2000+A2: 2005, Class D : Limits for harmonic current emission  
EN 61000-3-3:1995+A1: 2001 : Limitation of voltage fluctuation and flicker in low-voltage supply system

### Immunity:

EN 55024:1998+A1: 2001+A2: 2003 : Product family standard



TEST LABORATORY

Deputy Manager / Vincent Lin

The verification is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. Logo.

# Test Report Certification

Issued Date : 2008/05/09

Report No. : 084061R-ITCEP07V04



Product Name : Notebook

Applicant : MICRO-STAR INT'L Co., LTD.

Address : No. 69, Li-De St., Jung-He City, Taipei Hsien, Taiwan,  
R.O.C.

Manufacturer : MICRO-STAR INT'L Co., LTD.

Model No. : MS-1644, PR621, PR621X

Rated Voltage : AC 230 V / 50 Hz

EUT Voltage : AC 100-240 V, 50-60Hz

Trade Name : MSI

Applicable Standard : EN 55022: 2006 Class B  
EN 55024: 1998+A1: 2001+A2: 2003  
EN 61000-3-2:2000+A2: 2005  
EN 61000-3-3:1995+A1: 2001

Test Result : Complied

Performed Location : Quietek Corporation (Linkou Laboratory)  
No.5-22,Ruei-Shu Valley, Ruei-Ping Tsuen Lin Kuo  
Shiang, Taipei, 244 Taiwan, R.O.C.  
TEL:+866-2-8601-3788 / FAX:+886-2-8601-3789

Documented By : Genie Chang  
( Adm. Specialist / Genie Chang )

Reviewed By : Leo Lin  
( Senior Engineer / Leo Lin )

Approved By : Vincent Lin  
( Deputy Manager / Vincent Lin )

## Laboratory Information

We , **QuietTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scopes:

<b>Taiwan R.O.C.</b>	<b>: BSMI, NCC, TAF</b>
<b>Germany</b>	<b>: TUV Rheinland</b>
<b>Norway</b>	<b>: Nemko, DNV</b>
<b>USA</b>	<b>: FCC, NVLAP</b>
<b>Japan</b>	<b>: VCCI</b>

The related certificate for our laboratories about the test site and management system can be downloaded from QuietTek Corporation's Web Site : <http://tw.quietek.com/modules/enterprise/services.php?item=100>  
The address and introduction of QuietTek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

### HsinChu Testing Laboratory :

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.

TEL:+886-3-592-8858 / FAX:+886-3-592-8859

E-Mail : [service@quietek.com](mailto:service@quietek.com)



### LinKou Testing Laboratory :

No. 5, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.

TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789

E-Mail : [service@quietek.com](mailto:service@quietek.com)



### Suzhou (China) Testing Laboratory :

No. 99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou, China.

TEL : +86-512-6251-5088 / FAX : +86-512-6251-5098

E-Mail : [service@quietek.com](mailto:service@quietek.com)



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## 1. General Information

### 1.1. EUT Description

Product Name	Notebook
Trade Name	MSI
Model No.	MS-1644, PR621, PR621X

Keyparts List		
ITEM	Vendor	Model number
CPU	INTEL	T9600, 2.8GHz
		P9500, 2.53GHz
		T9400, 2.53GHz
		P8600, 2.4GHz
		P8400, 2.26GHz
LCD	SAMSUNG	LTN154AT01-001
		LTN154AT01
		LTN154X3-L01
		LTN154X3-L03
		LTN154X3-L03
		LTN154AT01-A03
	CHI MEI	N154I2-L02
		N154I2-L05
		N154I2-L01
		N154I1-L02
		N154I3-L03
		N154I3-L02
HDD	Fujitsu	MHW2080BH
		MHW2100BH
		MHW2120BH
		MHW2160BH
		MHY2250BH
	TOSHIBA	MK2546GSX
		MK8037GSX
		MK1237GSX
	WD	WD800BEVS-00RST0
		WD1200BEVS-XXUST0

		WD1600BEVS
		WD2500BEVS
	Hitachi	HTS541612J9SA00
		HTS541616J9SA00
	Seagate	ST9160824AS
		ST9250827AS
		ST9160821AS
		ST9120827AS
ODD(SATA)	Sony NEC (QSI)	AD-7560S
	HLDS	GSA-T50N
	PLDS	DS-8A2S
	TSST(Samsung)	TS-L633A
Memory	Transcend	TS64MSQ64V6J
		TS128MSQ64V6U
		JM667QSU-1G
		JM800QSU-1G
		TS256MSQ64V6U
		TS256MSQ64V6N
		JM667QSU-2G
	A-DATA	ADOPE1908342
	Kingston	KVR800D2S5/1G
		KVR667D2S5/2G
	Samsung	M470T2864QZ3-CF7
		M470T5663CZ3-CE6
		M470T2864DZ3-CE6
Inverter	Sampo	YIVNMS0018D11-A
	Sampo	YIVNMS0018D11--
	MITAC	DA-1A08-MS01L-A0
Battery	SMP	SQU-706/5200mAh
	SMP	SQU-718/7800mAh
	SMP	BTY-M66/4400mAh
	SMP	BTY-M66/4400mAh
	STL	BTY-M66/4800mAh
	STL	BTY-M66/5200mAh
	Welltop	BTY-M67/5200MAH

90 W Adapter	LITEON	PA-1900-04
	DELTA	ADP-90SB AB
		ADP-90SB BB
Modem	LSI	D40
	Motorola	ML3054
Robson	INTEL	NVCPEHWR002G2/QJL4
		NVCPEMWR002G2/QJL7
WLAN	INTEL	512AN_HMWG
		533AN_HMWG
	Atheros	AR5BXB63
BT	MSI	MS-6837D
Finger Printer	MSI (UPEK)	MS-13312
Touch Pad	SYNAPTICS	TM61PDZG307
Web Cam	ACME	901-0001-13

Note:

The EUT is including three models, The MS-1644 for MSI and the PR621, PR621X for different marketing requirement.

## 1.2. Mode of Operation

Quietek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
Mode 1:	
Mode 2:	
Mode 3:	
Mode 4:	
Mode 5:	
Mode 6:	
Mode 7:	
Mode 8:	
Mode 9:	
Mode 10:	
Mode 11:	
Mode 12:	
Mode 13:	
Mode 14:	
Mode 15:	
Mode 16:	
Mode 17:	
Mode 18:	
Final Test Mode	
Emission	Mode 1: Mode 2: Mode 3:
Immunity	Mode 1: Mode 2: Mode 3:

ITEM	MODE 1 (LCD+CRT/1280*800)	MODE 2 (LCD+ DVI/1280*800)
CPU	PENRYN,T9600(QAER),2.8GHz	PENRYN,T9400(QAEL),2.53GHz
Panel	SAMSUNG / LTN154AT01-A03	SAMSUNG / LTN154X3-L03
H.D.D	Seagate ST9160824AS	Seagate ST9250827AS
O.D.D.	TSST(Samsung) / TS-L633A	SONY NEC (QSI) / AD-7560S
Wireless LAN Card	INTEL/512 AN_HMW	AzureWave / AR5BXB63
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	TRANSCEND/TS64MSQ64V6J	TRANSCEND/TS128MSQ64V6U
Web Camera	ACME/901-0001-13	ACME/901-0001-13
AC Adapter	Delta ADP-90SB AB (2PIN)	Delta ADP-90SB BB (3PIN)
Inverter	SAMPO/YIVNMS0018D11-A	SAMPO/YIVNMS0018D11--
Battery	SMP / SQU-706/5200mAh	SMP / SQU-718/7800mAh
Robson	INTEL/NVCPEHWR002G2/QJL4	INTEL/NVCPEMWR002G2/QJL7
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

ITEM	MODE 3 (LCD+CRT/1280*800)	MODE 4 (LCD+CRT/1280*800)
CPU	PENRYN,P8600(QASB),2.4GHz	PENRYN,P8400(QARW),2.26GHz
Panel	SAMSUNG / LTN154X3-L03	SAMSUNG / LTN154X3-L01
H.D.D	Seagate ST9160821AS	Seagate ST9120827AS
O.D.D.	HLDS / GSA-T50N	HLDS / GSA-T50N
Wireless LAN Card	INTEL/533AN_HMW	INTEL/512 AN_HMW
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	TRANSCEND/JM667QSU-1G	TRANSCEND/JM800QSU-1G
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	LITE-ON/PA-1900-04	Delta ADP-90SB BB (3PIN)
Inverter	MITAC/DA-1A08-MS01L-A0	SAMPO/YIVNMS0018D11-A
Battery	SMP / BTY-M66/4400mAh	STL / BTY-M66/4800mAh
Robson	INTEL/NVCPEHWR002G2/892956	INTEL/NVCPEMWR002G2/892954
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

ITEM	MODE 5 (LCD+CRT/1280*800)	MODE 6 (LCD+CRT/1280*800)
CPU	INTEL/P9500 2.53G	PENRYN,T9600(QAER),2.8GHz
Panel	SAMSUNG / LTN154AT01	SAMSUNG / LTN154AT01-001
H.D.D	WD/ WD2500BEVS	WD/ WD1600BEVS
O.D.D.	PLDS / DS-8A2S	TSST(Samsung) / TS-L633A
Wireless LAN Card	AzureWave / AR5BXB63	INTEL/533AN_HMW
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	TRANSCEND/TS256MSQ64V6U	TRANSCEND/TS256MSQ64V6N
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	Delta ADP-90SB AB (2PIN)	LITE-ON/PA-1900-04
Inverter	SAMPO/YIVNMS0018D11--	MITAC/DA-1A08-MS01L-A0
Battery	STL / BTY-M66/5200mAh	Welltop /BTY-M67/5200MAH
Robson	INTEL/NVCPEMWR004G2/892955	INTEL/NVCPEHWR002G2/QJL4
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

ITEM	MODE 7 (LCD+CRT/1280*800)	MODE 8 (LCD+CRT/1280/800)
CPU	PENRYN,T9400(QAEL),2.53GHz	PENRYN,P8600(QASB),2.4GHz
Panel	CHI MEI / N154I2-L02	CHI MEI / N154I2-L05
H.D.D	WD/ WD1200BEVS	WD/ WD800BEVS
O.D.D.	TSST(Samsung) / TS-L633A	SONY NEC (QSI) / AD-7560S
Wireless LAN Card	INTEL/512 AN_HMW	AzureWave / AR5XB63
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	TRANSCEND/JM667QSU-2G	A-DATA/ADOPE1908342
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	Delta ADP-90SB AB (2PIN)	Delta ADP-90SB BB (3PIN)
Inverter	SAMPO/YIVNMS0018D11-A	SAMPO/YIVNMS0018D11--
Battery	SMP / SQU-706/5200mAh	SMP / SQU-718/7800mAh
Robson	INTEL/NVCPEMWR002G2/QJL7	INTEL/NVCPEHWR002G2/892956
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

ITEM	MODE 9 (LCD+CRT/1280*800)	MODE 10 (LCD+CRT/1280*800)
CPU	PENRYN,P8400(QARW),2.26GHz	INTEL/P9500 2.53G
Panel	CHI MEI / N154I2-L01	CHI MEI / N154I1-L02
H.D.D	FUJITSU/MHW2080BH	FUJITSU/MHW2100BH
O.D.D.	TSST(Samsung) / TS-L633A	TSST(Samsung) / TS-L633A
Wireless LAN Card	INTEL/533AN_HMW	INTEL/512 AN_HMW
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	KINGSTON/KVR800D2S5/1G	KINGSTON/KVR667D2S5/2G
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	LITE-ON/PA-1900-04	Delta ADP-90SB BB (3PIN)
Inverter	MITAC/DA-1A08-MS01L-A0	SAMPO/YIVNMS0018D11-A
Battery	SMP / BTY-M66/4400mAh	STL / BTY-M66/4800mAh
Robson	INTEL/NVCPEMWR002G2/892954	INTEL/NVCPEMWR004G2/892955
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

ITEM	MODE 11 (LCD+CRT/1280*800)	MODE 12 (LCD+CRT/1280*800)
CPU	PENRYN,T9600(QAER),2.8GHz	PENRYN,T9400(QAEL),2.53GHz
Panel	CHI MEI / N154I3-L03	CHI MEI / N154I3-L02
H.D.D	FUJITSU/MHW2120BH	FUJITSU/MHW2160BH
O.D.D.	SONY NEC (QSI) / AD-7560S	TSST(Samsung) / TS-L633A
Wireless LAN Card	AzureWave / AR5BXB63	INTEL/533AN_HMW
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	SAMSUNG/M470T2864QZ3-CF7	SAMSUNG/M470T2864DZ3-CE6
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	Delta ADP-90SB AB (2PIN)	LITE-ON/PA-1900-04
Inverter	SAMPO/YIVNMS0018D11--	MITAC/DA-1A08-MS01L-A0
Battery	STL / BTY-M66/5200mAh	Welltop /BTY-M67/5200MAH
Robson	INTEL/NVCPEHWR002G2/QJL4	INTEL/NVCPEMWR002G2/QJL7
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

ITEM	MODE 13 (LCD+CRT/1280*800)	MODE 14 (LCD+CRT/1280*800)
CPU	PENRYN,P8600(QASB),2.4GHz	PENRYN,P8400(QARW),2.26GHz
Panel	CHI MEI / N154I2-L02	CHI MEI / N154I2-L05
H.D.D	FUJITSU/MHY2250BH	TOSHIBA/MK2546GSX
O.D.D.	TSST(Samsung) / TS-L633A	SONY NEC (QSI) / AD-7560S
Wireless LAN Card	INTEL/512 AN_HMW	AzureWave / AR5BXB63
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	SAMSUNG/M470T5663CZ3-CE6	TRANSCEND/TS64MSQ64V6J
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	Delta ADP-90SB AB (2PIN)	Delta ADP-90SB AB (2PIN)
Inverter	SAMPO/YIVNMS0018D11-A	SAMPO/YIVNMS0018D11--
Battery	SMP/SQU-706/5200mAh	SMP/BTY-M66/4400mAh
Robson	INTEL/NVCPEHWR002G2/892956	INTEL/NVCPEMWR002G2/892954
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02



ITEM	MODE 15 (LCD+CRT/1280*800)	MODE 16 (LCD+CRT/1280*800)
CPU	INTEL/P9500 2.53G	PENRYN,T9600(QAER),2.8GHz
Panel	CHI MEI / N154I2-L01	CHI MEI / N154I1-L02
H.D.D	TOSHIBA/MK8037GSX	TOSHIBA/MK1237GSX
O.D.D.	TSST(Samsung) / TS-L633A	TSST(Samsung) / TS-L633A
Wireless LAN Card	INTEL/533AN_HMW	INTEL/512 AN_HMW
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	TRANSCEND/TS128MSQ64V6U	TRANSCEND/JM667QSU-1G
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	LITE-ON/PA-1900-04	Delta ADP-90SB AB (2PIN)
Inverter	MITAC/DA-1A08-MS01L-A0	SAMPO/YIVNMS0018D11-A
Battery	SMP/SQU-718/7800mAh	SMP/SQU-706/5200mAh
Robson	INTEL/NVCPEHWR002G2/QJL4	INTEL/NVCPEMWR004G2/892955
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

ITEM	MODE 17 (LCD+CRT/1280*800)	MODE 18 (LCD+CRT/1280*800)
CPU	PENRYN,T9400(QAEL),2.53GHz	PENRYN,P8600(QASB),2.4GHz
Panel	CHI MEI / N154I3-L03	CHI MEI / N154I3-L02
H.D.D	HITACHI/HTS541612J9SA00	HITACHI/HTS541616J9SA00
O.D.D.	SONY NEC (QSI) / AD-7560S	SONY NEC (QSI) / AD-7560S
Wireless LAN Card	AzureWave / AR5BXB63	INTEL/533AN_HMW
Modem Module	LSI / D40	MOTOROLA/ML3054
Memory	TRANSCEND/JM800QSU-1G	TRANSCEND/TS256MSQ64V6U
Web Camera	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13	CMOS CAMERA MODULE/1.3M Pixels/ACME/901-0001-13
AC Adapter	Delta ADP-90SB AB (2PIN)	LITE-ON/PA-1900-04
Inverter	SAMPO/YIVNMS0018D11--	MITAC/DA-1A08-MS01L-A0
Battery	SMP/SQU-706/5200mAh	SMP/BTY-M66/4400mAh
Robson	INTEL/NVCPEMWR002G2/QJL7	INTEL/NVCPEHWR002G2/892956
Bluetooth	MSI/MS-6837D	MSI/MS-6837D
Port Replicator	--	MSI/MS-1P02

### 1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

#### Mode 1

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Monitor	SONY	CPD-G500	2706658	Non-Shielded, 1.8m
2 Microphone & Earphone	PCHOME	N/A	N/A	N/A
3 USB Mouse	Logitech	M-BE58	HCA30103100	N/A
4 iPod nano	Apple	A1199	YM708A72VQ5	N/A
5 SATA HDD	Onnto	ST-M10	500127-E33-0007	Non-Shielded, 1.8m With Core*1
6 COMBO HDD	TeraSys	F12-UF	A0100215-64b0014	N/A
7 Notebook PC	DELL	PPT	N/A	Non-Shielded, 1.8m
8 Exchange Network	Sun Moon Star	PX-4	95170087	Non-Shielded, 1.8m
9 Printer	EPSON	StyLus C63	FAPY094331	Non-Shielded, 1.8m

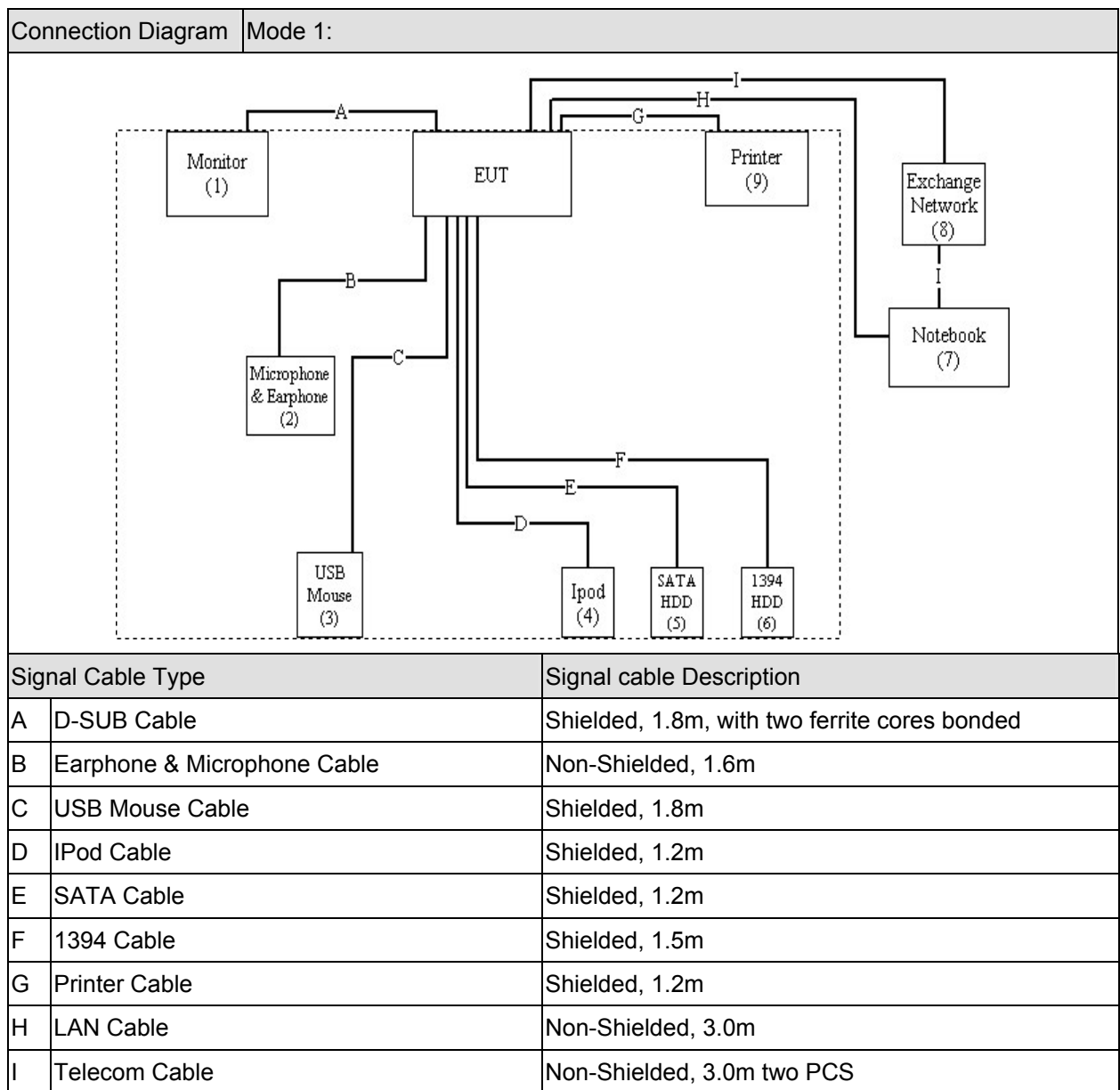
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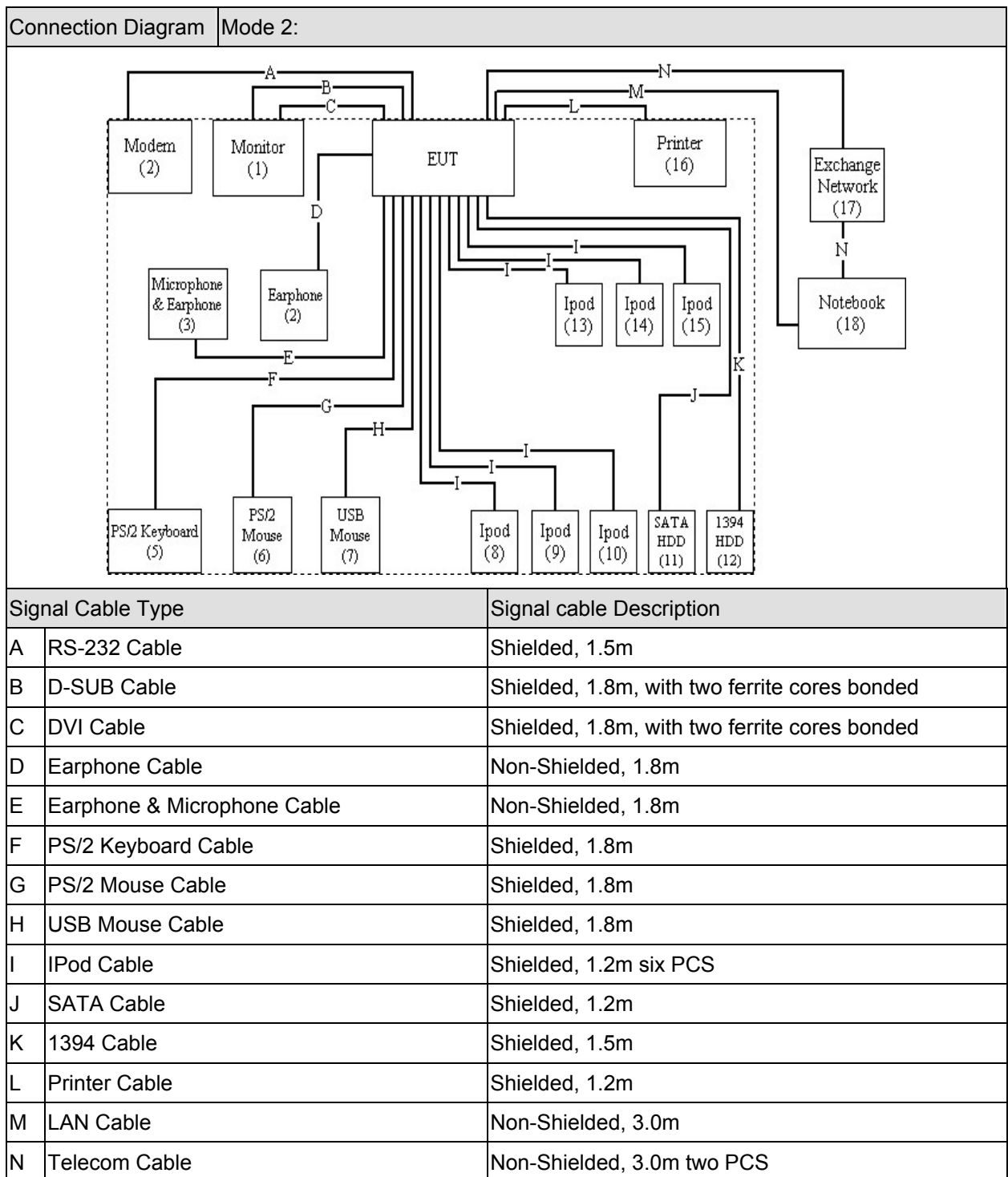
Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Monitor	Dell	2407WFPb	CN-0FC255-46633-638-1MDS	Non-Shielded, 1.8m
2 Modem	ACEEX	DM-1414	0102027554	N/A
3 Microphone & Earphone	PCHOME	N/A	N/A	N/A
4 Earphone	AIWA	N/A	N/A	N/A
5 Keyboard	COMPAQ	KB-0133	B55940MGAPK00K	N/A
6 Mouse	HP	M-S69	N/A	N/A
7 USB Mouse	Logitech	M-BE58	HCA30103100	Non-Shielded, 1.8m
8 iPod nano	Apple	A1199	YM708A72VQ5	N/A
9 iPod nano	Apple	A1199	YM706LSCVQ5	N/A
10 iPod nano	Apple	A1199	YM7088TVVQ5	N/A
11 SATA HDD	Onnto	ST-M10	500127-E33-0007	Non-Shielded, 1.8m With Core*1
12 COMBO HDD	TeraSys	F12-UF	A0100215-64b0014	Non-Shielded 1.8m
13 iPod nano	Apple	A1199	5U7047U8VQ5	N/A
14 iPod nano	Apple	A1199	YM709RBUVQ5	N/A
15 iPod nano	Apple	A1199	SU7047UXVQ5	N/A
16 Printer	EPSON	StyLus C63	FAPY094331	Non-Shielded, 1.8m
17 Exchange Network	Sun Moon Star	PX-4	95170087	Non-Shielded, 1.8m
18 Notebook PC	DELL	PPT	N/A	Non-Shielded, 1.8m

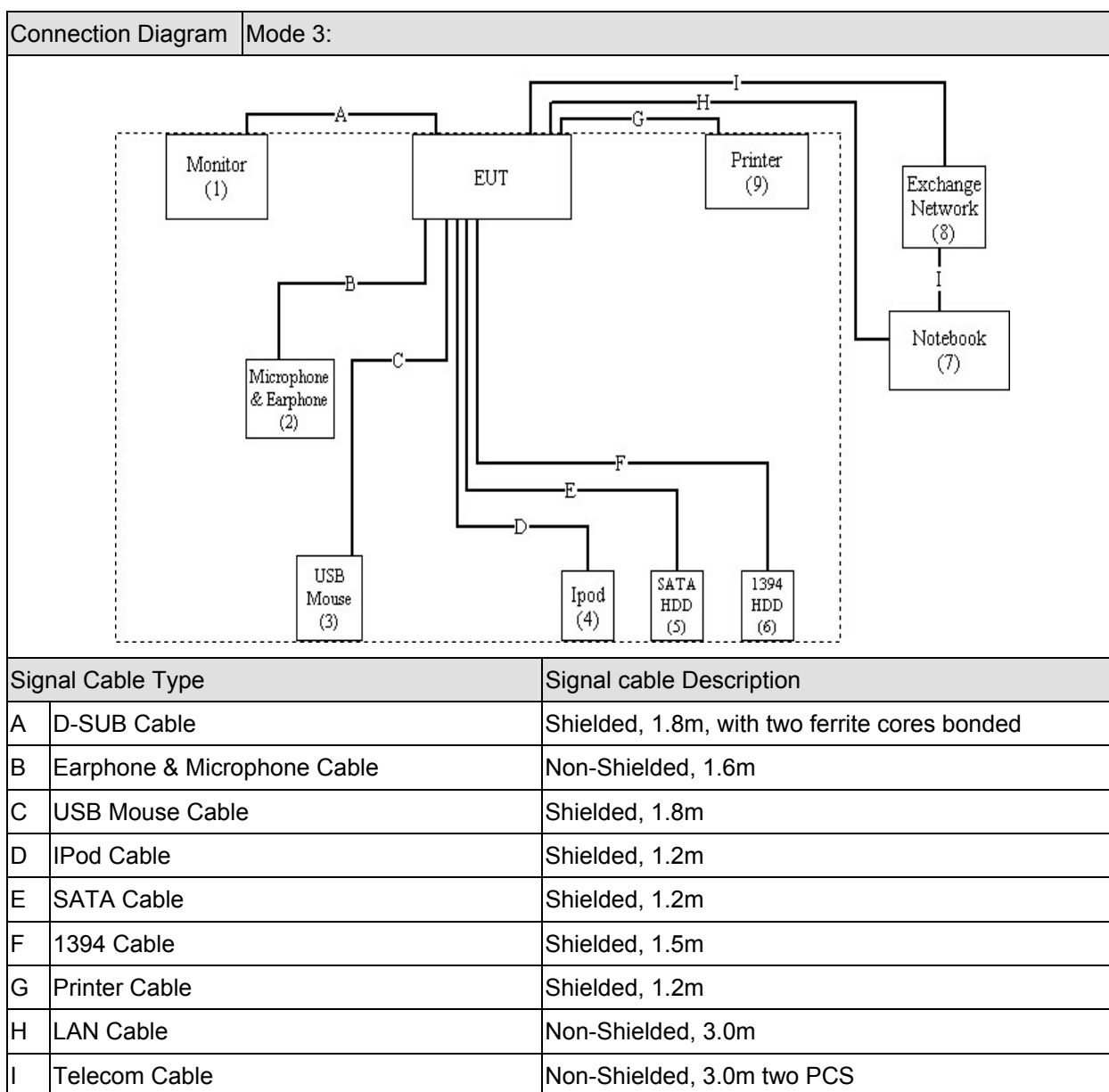
#### Mode 3

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Monitor	SONY	CPD-G500	2706658	Non-Shielded, 1.8m
2 Microphone & Earphone	PCHOME	N/A	N/A	N/A
3 USB Mouse	Logitech	M-BE58	HCA30103100	N/A
4 iPod nano	Apple	A1199	YM708A72VQ5	N/A
5 SATA HDD	Onnto	ST-M10	500127-E33-0007	Non-Shielded, 1.8m With Core*1
6 COMBO HDD	TeraSys	F12-UF	A0100215-64b0014	N/A
7 Notebook PC	DELL	PPT	N/A	Non-Shielded, 1.8m
8 Exchange Network	Sun Moon Star	PX-4	95170087	Non-Shielded, 1.8m
9 Printer	EPSON	StyLus C63	FAPY094331	Non-Shielded, 1.8m

## 1.4. Configuration of Tested System







## 1.5. EUT Exercise Software

1	Setup the EUT and peripheral as shown on Figure
2	Connect the power to EUT and peripherals, then turn on the power of all equipments.
3	Waiting for EUT to enter Window Vista Operating System, and adjust the display resolution to the test mode.
4	Connect LAN and Telecom to Notebook PC for transmitting data.
5	Activate Wireless interface and Bluetooth function, and perform the wireless data communication with the other Notebook (write/delete action).
6	Connect 1394 to Slim Combo for transmitting data.
7	Run Windows Media Player program and play a disk with color Bar pattern
8	Run “H” pattern.
9	Begin to test and repeat the above procedure (4)~(8)

## 2. Technical Test

### 2.1. Summary of Test Result

- ☒ No deviations from the test standards
- ☐ Deviations from the test standards as below description:

Emission			
Performed Item	Normative References	Test Performed	Deviation
Conducted Emission	EN 55022: 2006 Class B	Yes	No
Impedance Stabilization Network	EN 55022: 2006 Class B	Yes	No
Radiated Emission	EN 55022: 2006 Class B	Yes	No
Power Harmonics	EN 61000-3-2:2000+A2: 2005	Yes	No
Voltage Fluctuation and Flicker	EN 61000-3-3:1995+A1: 2001	Yes	No

Immunity			
Performed Item	Normative References	Test Performed	Deviation
Electrostatic Discharge	IEC 61000-4-2 Edition 1.2: 2001-04	Yes	No
Radiated susceptibility	IEC 61000-4-3:2002+A1: 2002	Yes	No
Electrical fast transient/burst	IEC 61000-4-4:2004	Yes	No
Surge	IEC 61000-4-5 Edition 1.1: 2001-04	Yes	No
Conducted susceptibility	IEC 61000-4-6 Edition 2.1: 2004-11	Yes	No
Power frequency magnetic field	IEC 61000-4-8 Edition 1.1: 2001-03	Yes	No
Voltage dips and interruption	IEC 61000-4-11 2nd Edition: 2004-03	Yes	No

## 2.2. List of Test Equipment

### Conducted Emission / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	836858/022	2008/02/12
LISN	R&S	ENV4200	833209/007	2007/07/13
LISN	R&S	ESH3-Z5	836679/020	2008/01/26
Pulse Limiter	R&S	ESH3-Z2	357.88.10.52	2007/09/04

### Impedance Stabilization Network / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Schaffner NSG 2070 RF-Generator	N/A	N/A	N/A	N/A
Capacitive Voltage Probe	Schaffner	CVP2200A	18331	2007/11/10
EMI Test Receiver	R&S	ESCS 30	836858/022	2008/02/12
LISN	R&S	ESH3-Z5	836679/020	2008/01/26
LISN	R&S	ENV4200	833209/007	2007/07/13
Impedance Stabilization Network	Schaffner	ISN T400	19099	2007/07/15
Pulse Limiter	R&S	ESH3-Z2	357.88.10.52	2007/09/04
RF Current Probe	FCC	F-65 10KHz~1GHz	198	2007/11/10

### Radiated Emission / Site3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2704	2007/08/09
Broadband Horn Antenna	Schwarzbeck	BBHA9170	208	2007/07/25
EMI Test Receiver	R&S	ESCS 30	838251/001	2007/05/11
EMI Test Receiver	R&S	ESI26	838786/004	2007/06/19
Horn Antenna	Schwarzbeck	BBHA9120D	305	2007/08/10
Pre-Amplifier	QTK	N/A	N/A	2008/01/03
Pre-Amplifier	MITEQ	AMF-4D-18040 0-45-6P	925974	2008/01/03
Spectrum Analyzer	Advantest	R3162	101102468	2007/10/24

### Power Harmonics / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AC Power Source(Harmonic)	Schaffner	NSG 1007	HK54148	2007/06/29
IEC1000-4-X Analyzer(Flicker)	Schaffner	CCN 1000-1	X7 1887	2007/06/29

### Voltage Fluctuation and Flicker / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AC Power Source(Harmonic)	Schaffner	NSG 1007	HK54148	2007/06/29
IEC1000-4-X Analyzer(Flicker)	Schaffner	CCN 1000-1	X7 1887	2007/06/29



## Electrostatic Discharge / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
ESD Simulator System	KeyTek	MZ-15/EC	0112372	2007/08/02
Horizontal Coupling Plane(HCP)	Quietek	HCP AL50	N/A	N/A
Vertical Coupling Plane(VCP)	Quietek	VCP AL50	N/A	N/A

## Radiated susceptibility / CB5

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AF-BOX	R&S	AF-BOX ACCUST	100007	N/A
Audio Analyzer	R&S	UPL 16	100137	2008/03/16
Bilog Antenna	Schaffner Chase	CBL6112B	2450	2008/01/03
Broad-Band Antenna	Schwarzbeck	VULB 9166	1085	2007/08/02
CMU200 UNIV.RADIOCOMM	R&S	CMU200	104846	2008/03/16
Directional Coupler	A&R	DC 6180	22735	N/A
Dual Microphone Supply	B&K	5935	2426784	2007/08/04
Mouth Simulator	B&K	4227	2439692	2007/08/04
Power Amplifier	A&R	30S1G3	309453	N/A
Power Amplifier	A&R	100W10000M7	A285000010	N/A
Power Meter	R&S	NRVD(P.M)	100219	2008/04/21
Pre-Amplifier	A&R	150A220	23067	N/A
Probe Microphone	B&K	4182	2278070	2007/08/04
Signal Generator	R&S	SMY02(9K-2080)	825454/028	2007/09/22

## Electrical fast transient/burst / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Schaffner NSG 2050 System Mainframe	N/A	N/A	N/A	N/A

## Surge / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Schaffner NSG 2050 System Mainframe	N/A	N/A	N/A	N/A

## Conducted susceptibility / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Schaffner NSG 2070 RF-Generator	Schaffner	N/A	N/A	2008/04/21

## Power frequency magnetic field / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Induction Coil Interface	Schaffner	INA 2141	6002	N/A
Magnetic Loop Coil	Schaffner	INA 702	199749-020IN	N/A
Magnetic/Electric field measuring system	Lackmann Phymetric	MV3	N/A	N/A
Triaxial ELF Magnetic Field Meter	F.B.BELL	4090	9852	2007/05/30

## Voltage dips and interruption / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Schaffner NSG 2050 System Mainframe	N/A	N/A	N/A	N/A

Schaffner NSG 2070 RF-Generator				
Instrument	Manufacturer	Type No.	Serial No	Cal. Date
CDN	Schaffner	CAL U100A	20405	2008/03/27
CDN	Schaffner	TRA U150	20454	2008/03/27
CDN M016S	Schaffner	CAL U100A	20410	2008/03/27
CDN M016S	Schaffner	TRA U150	21167	2008/03/27
CDN T002	Schaffner	CAL U100	20491	2008/03/27
CDN T002	Schaffner	TRA U150	21169	2008/03/27
CDN T400	Schaffner	CAL U100	17735	2008/03/27
CDN T400	Schaffner	TRA U150	21166	2008/03/27
Coupling Decoupling Network	Schaffner	CDN M016S	20822	2008/03/27
Coupling Decoupling Network	Schaffner	CDN M016S	20823	2008/03/27
Coupling Decoupling Network	Schaffner	CDN T002	19018	2008/03/27
Coupling Decoupling Network	Schaffner	CDN T400	21226	2008/03/27
EM-CLAMP	Schaffner	KEMZ 801	21024	2008/04/21

## **2.3. Measurement Uncertainty**

### Conducted Emission

The measurement uncertainty is evaluated as  $\pm 2.26$  dB.

### Impedance Stabilization Network

The measurement uncertainty is evaluated as  $\pm 2.26$  dB.

### Radiated Emission

The measurement uncertainty is evaluated as  $\pm 3.19$  dB.

### Electrostatic Discharge

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025: 1999[2], the requirements for measurement uncertainty in ESD testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant ESD standards. The immunity test signal from the ESD system meet the required specifications in IEC 61000-4-2 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 1.63 % and 2.76%.

### Radiated susceptibility

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025: 1999[2], the requirements for measurement uncertainty in RS testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant RS standards. The immunity test signal from the RS system meet the required specifications in IEC 61000-4-3 through the calibration for the uniform field strength and monitoring for the test level with the uncertainty evaluation report for the electrical field strength as being 2.72 dB.

### Electrical fast transient/burst

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025: 1999[2], the requirements for measurement uncertainty in EFT/Burst testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant EFT/Burst standards. The immunity test signal from the EFT/Burst system meet the required specifications in IEC 61000-4-4 through the calibration report with the calibrated uncertainty for the waveform of voltage, frequency and timing as being 1.63 %, 2.8 10-10 and 2.76%.

### Surge

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025: 1999[2], the requirements for measurement uncertainty in Surge testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant Surge standards. The immunity test signal from the Surge system meet the required specifications in IEC 61000-4-5 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 1.63 % and 2.76%.

Conducted susceptibility

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025: 1999[2], the requirements for measurement uncertainty in CS testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant CS standards. The immunity test signal from the CS system meet the required specifications in IEC 61000-4-6 through the calibration for unmodulated signal and monitoring for the test level with the uncertainty evaluation report for the injected modulated signal level through CDN and EM Clamp/Direct Injection as being 3.72 dB and 2.78 dB.

Power frequency magnetic field

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025: 1999[2], the requirements for measurement uncertainty in PFM testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant PFM standards. The immunity test signal from the PFM system meet the required specifications in IEC 61000-4-8 through the calibration report with the calibrated uncertainty for the Gauss Meter to verify the output level of magnetic field strength as being 2 %.

Voltage dips and interruption

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025: 1999[2], the requirements for measurement uncertainty in DIP testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant DIP standards. The immunity test signal from the DIP system meet the required specifications in IEC 61000-4-11 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 1.63 % and 2.76%.

## 2.4. Test Environment

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Impedance Stabilization Network	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Electrostatic Discharge	Temperature (°C)	15-35	21.1
	Humidity (%RH)	30-60	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated susceptibility	Temperature (°C)	15-35	21.1
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Electrical fast transient/burst	Temperature (°C)	15-35	21.1
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Surge	Temperature (°C)	15-35	21.1
	Humidity (%RH)	10-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Conducted susceptibility	Temperature (°C)	15-35	21.1
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000

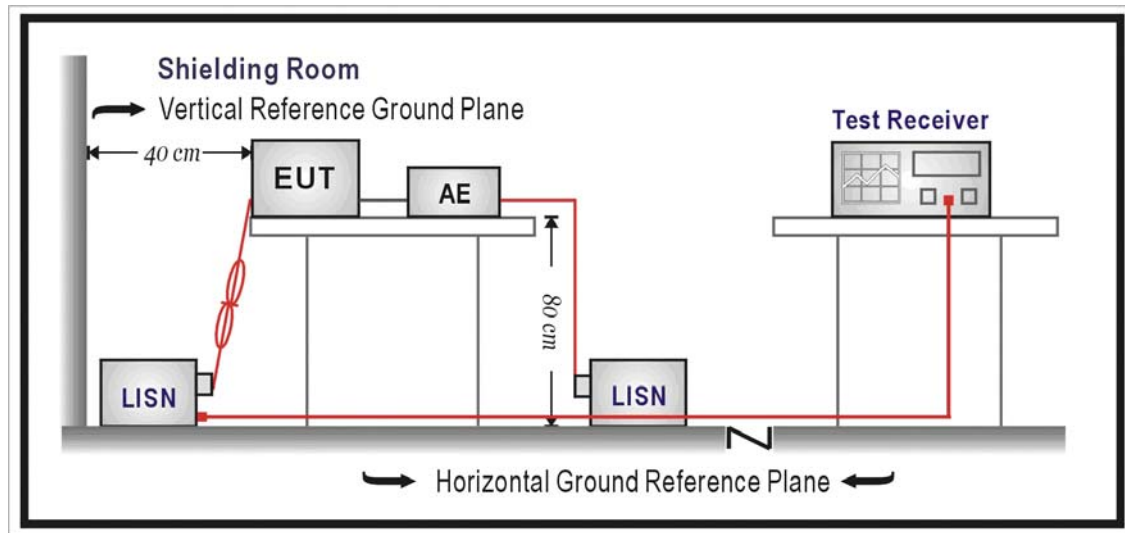
Power frequency magnetic field	Temperature (°C)	15-35	21.1
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Voltage dips and interruption	Temperature (°C)	15-35	21.1
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000

### 3. Conducted Emission (Main Terminals)

#### 3.1. Test Specification

According to EMC Standard : EN 55022

#### 3.2. Test Setup



#### 3.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

### **3.4. Test Procedure**

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.

(Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

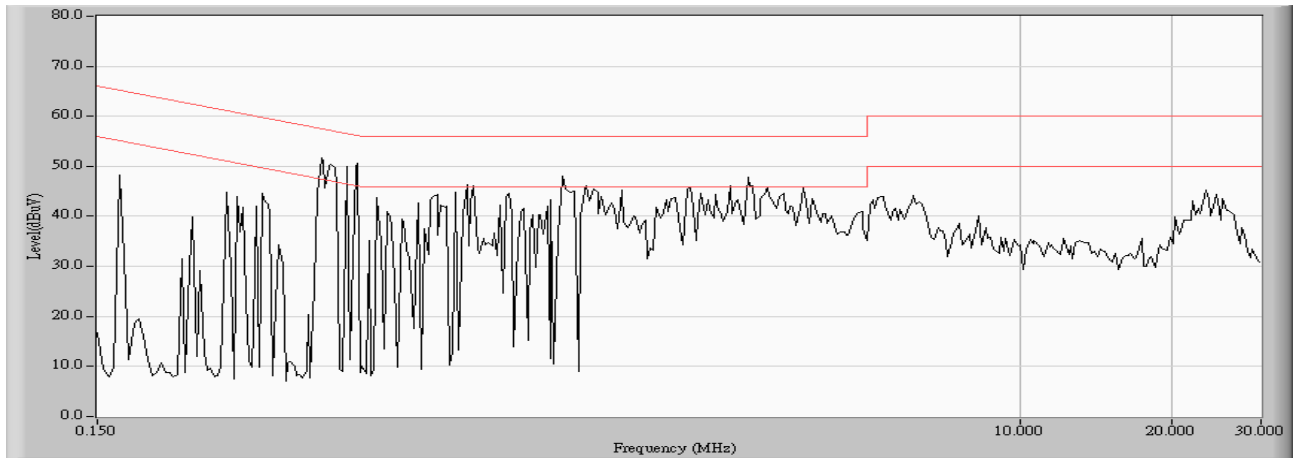
### **3.5. Deviation from Test Standard**

No deviation.

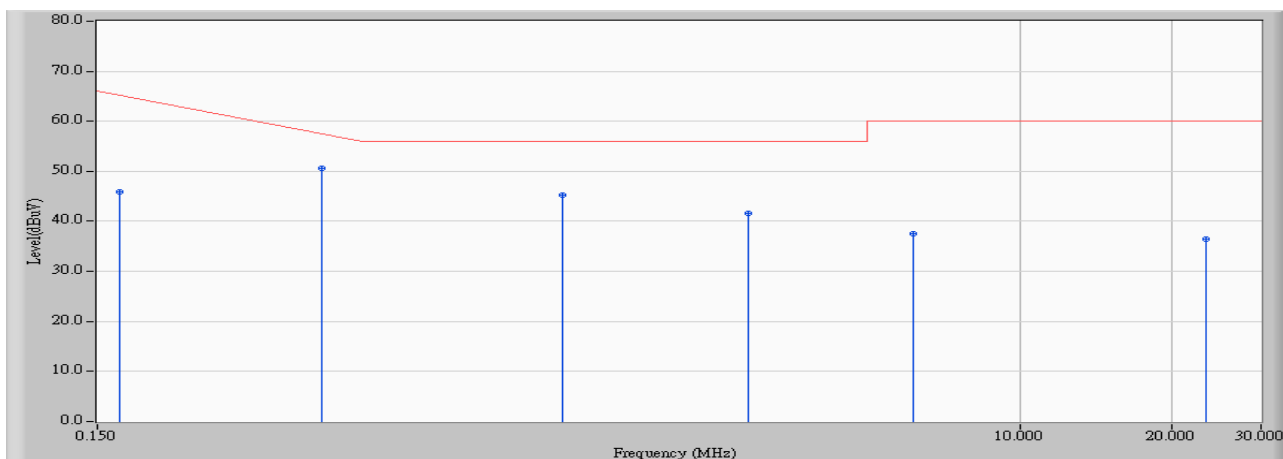


### 3.6. Test Result

Site : SR-1	Time : 2008/04/02 - 03:38
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 1



Site : SR-1	Time : 2008/04/02 - 03:39
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 1

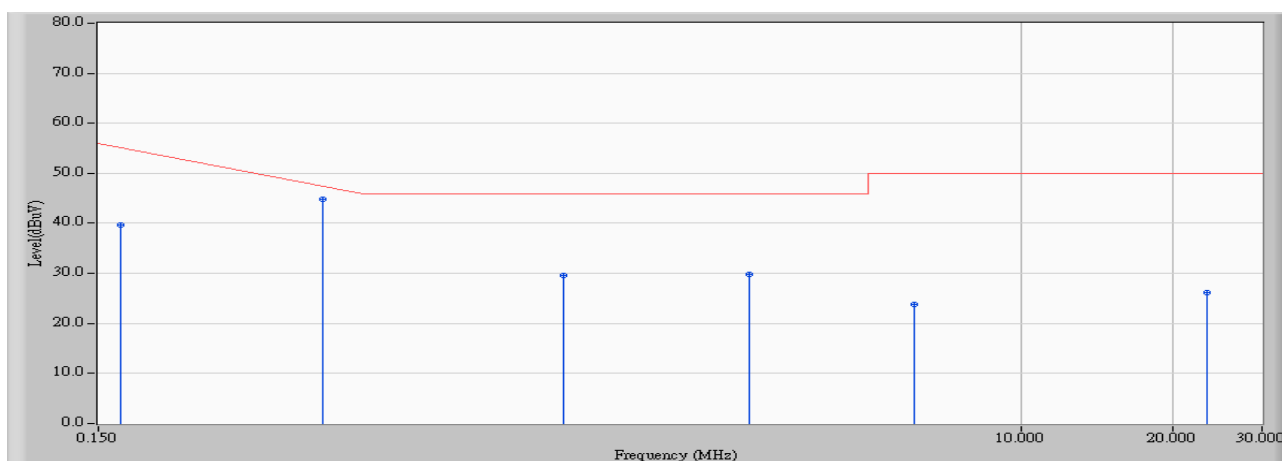


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.166	0.556	45.420	45.976	-19.567	65.543	QUASIPeAK
2	*	0.416	0.300	50.250	50.550	-7.850	58.400	QUASIPeAK
3		1.244	0.320	44.860	45.180	-10.820	56.000	QUASIPeAK
4		2.912	0.370	41.340	41.710	-14.290	56.000	QUASIPeAK
5		6.177	0.470	37.130	37.600	-22.400	60.000	QUASIPeAK
6		23.322	1.170	35.300	36.470	-23.530	60.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/02 - 03:39
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 1

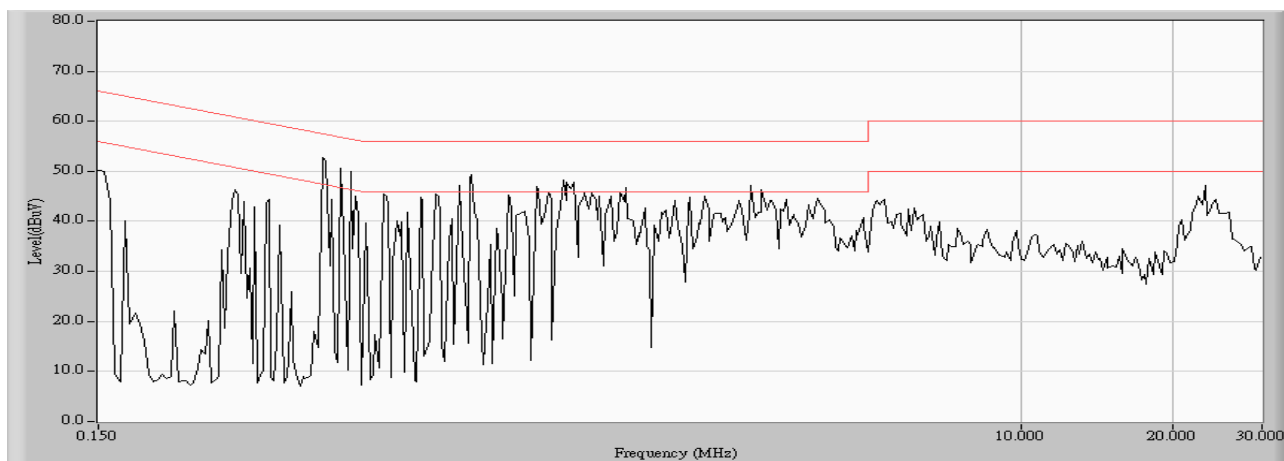


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.166	0.556	39.060	39.616	-15.927	55.543	AVERAGE
2	*	0.416	0.300	44.440	44.740	-3.660	48.400	AVERAGE
3		1.244	0.320	29.220	29.540	-16.460	46.000	AVERAGE
4		2.912	0.370	29.490	29.860	-16.140	46.000	AVERAGE
5		6.177	0.470	23.250	23.720	-26.280	50.000	AVERAGE
6		23.322	1.170	24.900	26.070	-23.930	50.000	AVERAGE

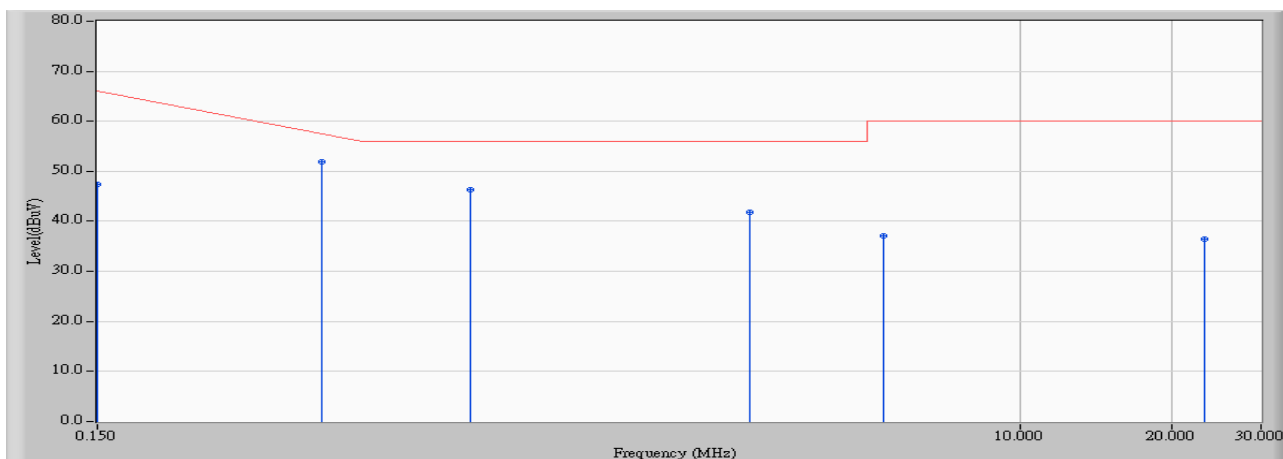
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/02 - 03:40
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 1



Site : SR-1	Time : 2008/04/02 - 03:40
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 1

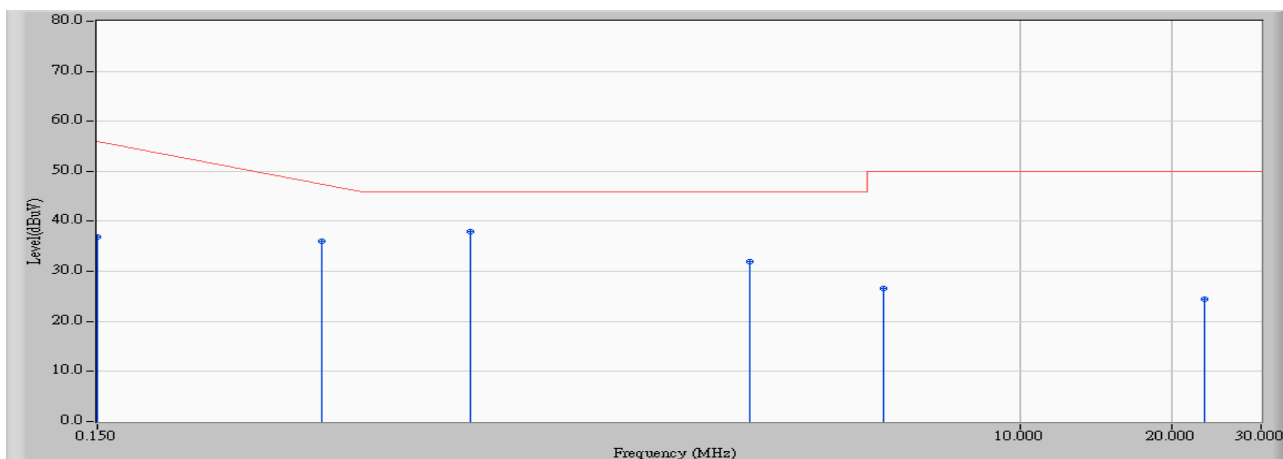


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	0.300	47.070	47.370	-18.630	66.000	QUASIPeAK
2	*	0.416	0.310	51.490	51.800	-6.600	58.400	QUASIPeAK
3		0.818	0.320	46.030	46.350	-9.650	56.000	QUASIPeAK
4		2.920	0.370	41.400	41.770	-14.230	56.000	QUASIPeAK
5		5.380	0.420	36.680	37.100	-22.900	60.000	QUASIPeAK
6		23.275	1.030	35.500	36.530	-23.470	60.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/02 - 03:40
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 1

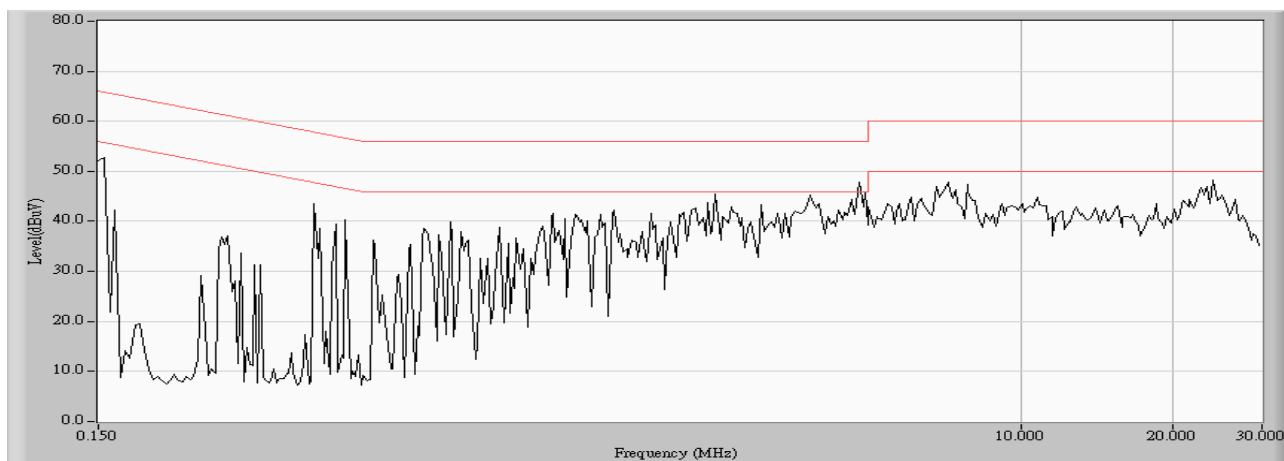


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	0.300	36.510	36.810	-19.190	56.000	AVERAGE
2		0.416	0.310	35.780	36.090	-12.310	48.400	AVERAGE
3	*	0.818	0.320	37.620	37.940	-8.060	46.000	AVERAGE
4		2.920	0.370	31.590	31.960	-14.040	46.000	AVERAGE
5		5.380	0.420	26.200	26.620	-23.380	50.000	AVERAGE
6		23.275	1.030	23.410	24.440	-25.560	50.000	AVERAGE

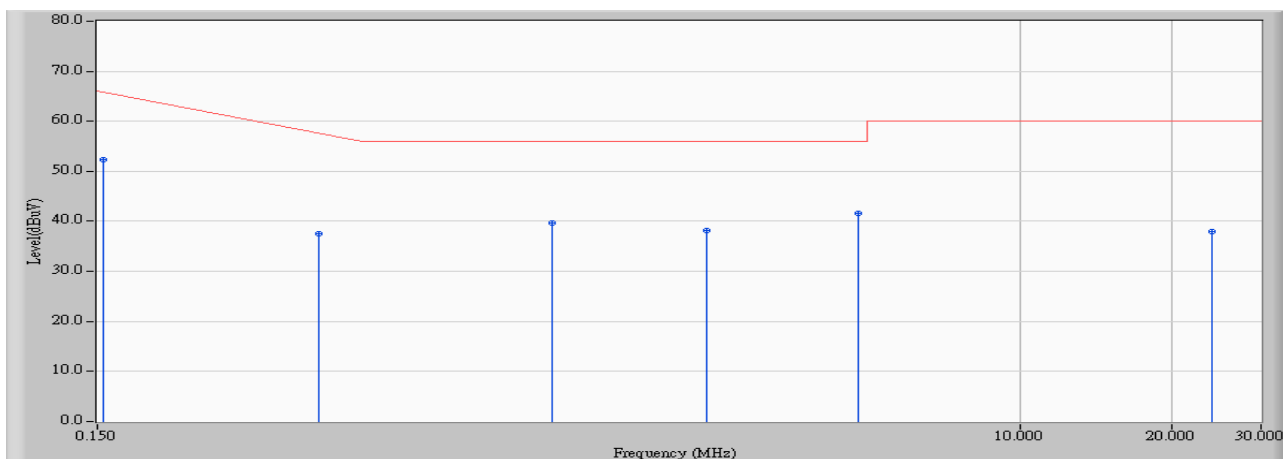
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/02 - 03:44
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 2



Site : SR-1	Time : 2008/04/02 - 03:45
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 2



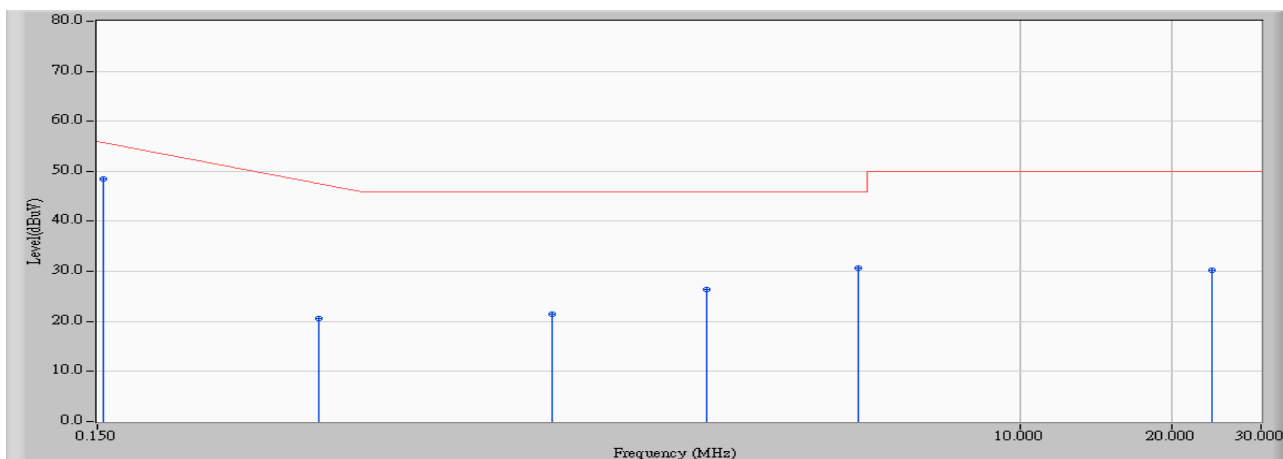
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.154	0.364	51.920	52.284	-13.602	65.886	QUASIPeAK
2		0.412	0.300	37.210	37.510	-21.004	58.514	QUASIPeAK
3		1.193	0.320	39.380	39.700	-16.300	56.000	QUASIPeAK
4		2.412	0.350	37.830	38.180	-17.820	56.000	QUASIPeAK
5		4.791	0.425	41.140	41.565	-14.435	56.000	QUASIPeAK
6		23.962	1.180	36.700	37.880	-22.120	60.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor



Site : SR-1	Time : 2008/04/02 - 03:45
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 2

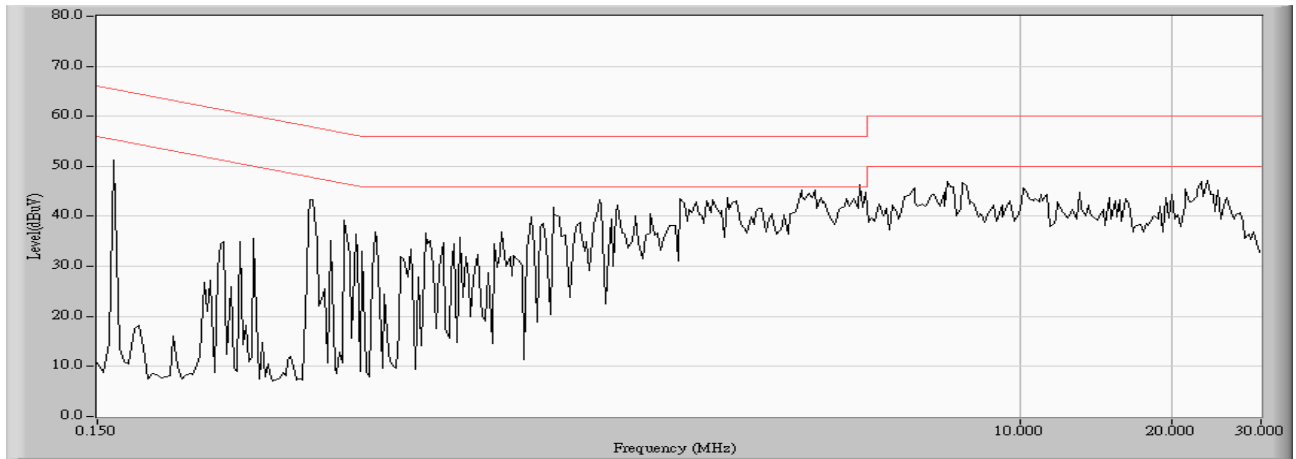


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.154	0.364	48.130	48.494	-7.392	55.886	AVERAGE
2		0.412	0.300	20.230	20.530	-27.984	48.514	AVERAGE
3		1.193	0.320	21.140	21.460	-24.540	46.000	AVERAGE
4		2.412	0.350	26.100	26.450	-19.550	46.000	AVERAGE
5		4.791	0.425	30.200	30.625	-15.375	46.000	AVERAGE
6		23.962	1.180	29.100	30.280	-19.720	50.000	AVERAGE

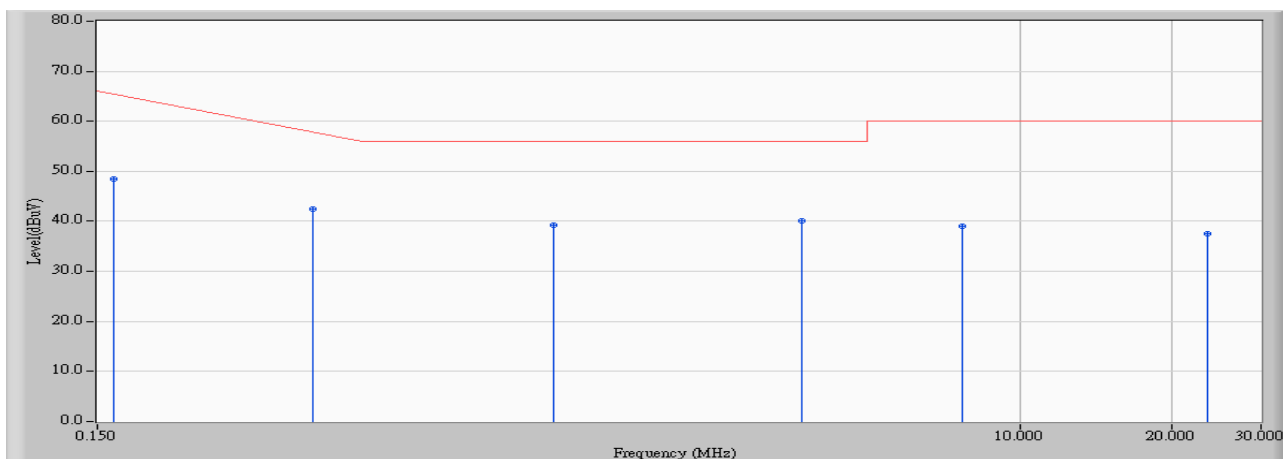
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/02 - 03:45
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 2



Site : SR-1	Time : 2008/04/02 - 03:46
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 2

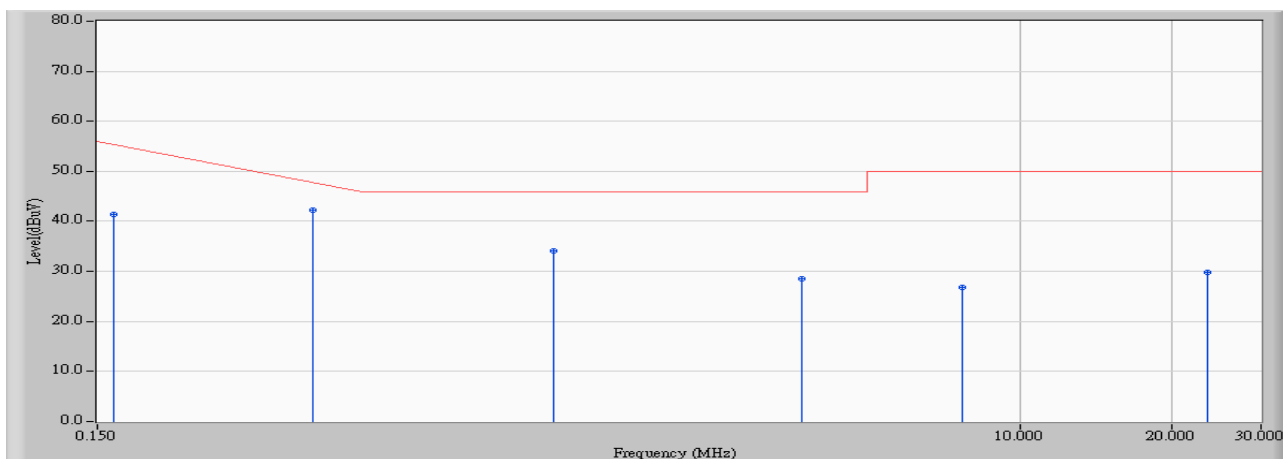


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.162	0.300	48.220	48.520	-17.137	65.657	QUASIPeAK
2		0.400	0.310	42.100	42.410	-16.447	58.857	QUASIPeAK
3		1.197	0.330	39.000	39.330	-16.670	56.000	QUASIPeAK
4	*	3.697	0.390	39.820	40.210	-15.790	56.000	QUASIPeAK
5		7.720	0.460	38.660	39.120	-20.880	60.000	QUASIPeAK
6		23.517	1.040	36.420	37.460	-22.540	60.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/02 - 03:46
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 2

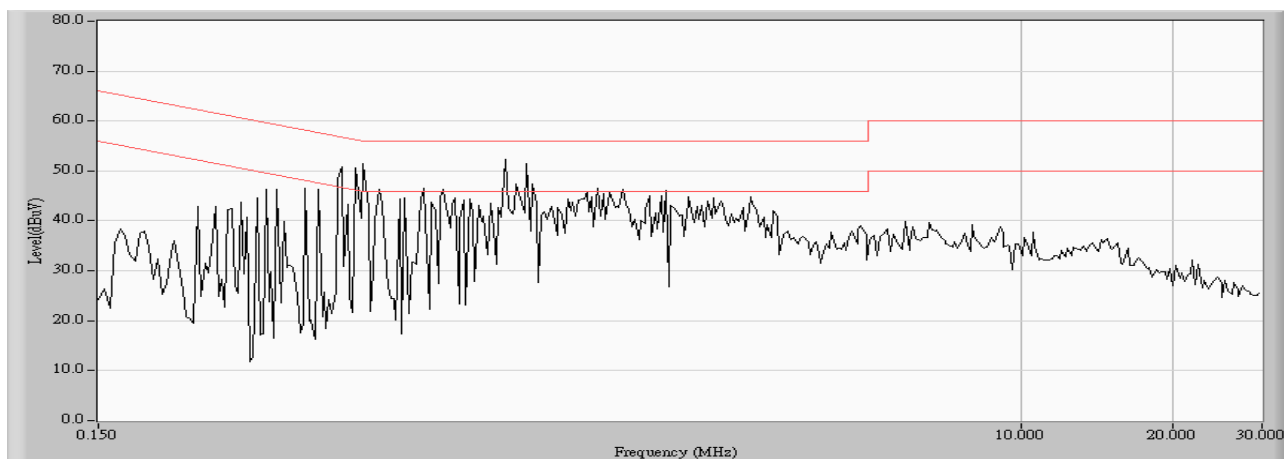


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.162	0.300	41.130	41.430	-14.227	55.657	AVERAGE
2	*	0.400	0.310	41.950	42.260	-6.597	48.857	AVERAGE
3		1.197	0.330	33.860	34.190	-11.810	46.000	AVERAGE
4		3.697	0.390	28.050	28.440	-17.560	46.000	AVERAGE
5		7.720	0.460	26.260	26.720	-23.280	50.000	AVERAGE
6		23.517	1.040	28.680	29.720	-20.280	50.000	AVERAGE

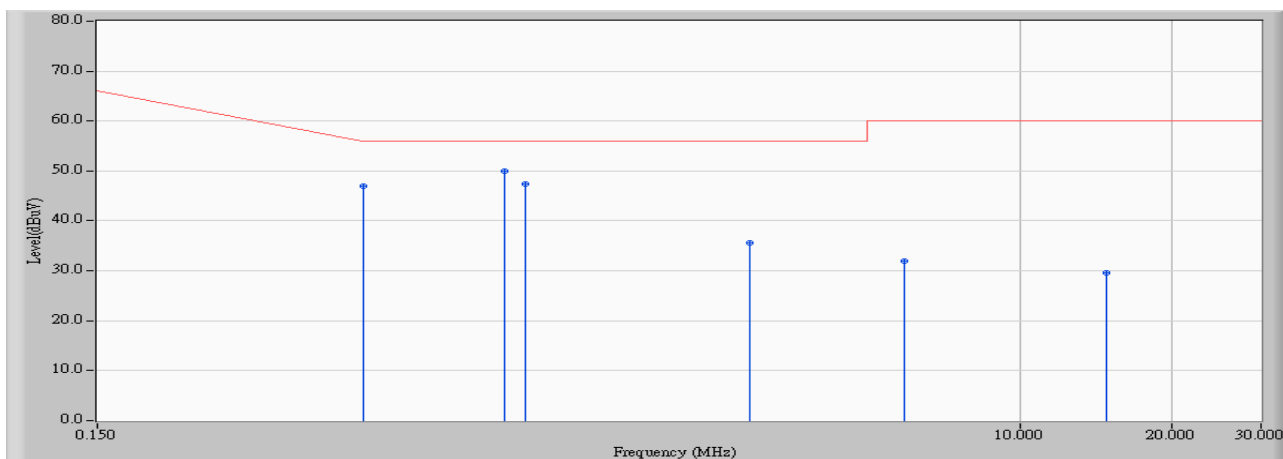
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 07:10
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 3



Site : SR-1	Time : 2008/04/26 - 07:11
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 3

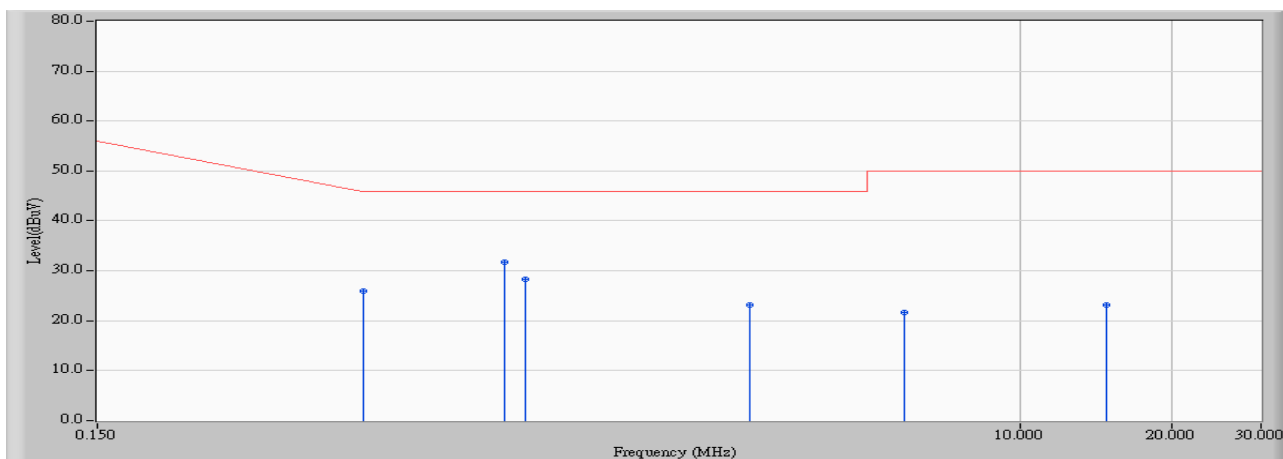


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.502	0.300	46.650	46.950	-9.050	56.000	QUASIPeAK
2	*	0.955	0.310	49.700	50.010	-5.990	56.000	QUASIPeAK
3		1.052	0.320	47.070	47.390	-8.610	56.000	QUASIPeAK
4		2.927	0.370	35.320	35.690	-20.310	56.000	QUASIPeAK
5		5.931	0.460	31.440	31.900	-28.100	60.000	QUASIPeAK
6		14.795	0.990	28.530	29.520	-30.480	60.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 07:11
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Notebook	Probe : LISN-L(023) - Line1
Power : AC 230V/50Hz	Note : Mode 3

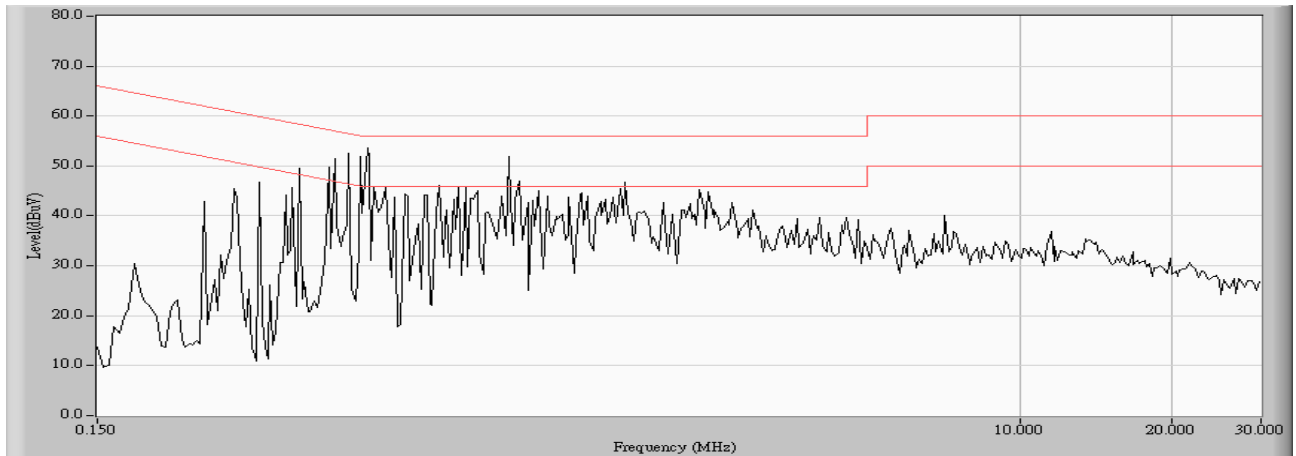


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.502	0.300	25.670	25.970	-20.030	46.000	AVERAGE
2	*	0.955	0.310	31.340	31.650	-14.350	46.000	AVERAGE
3		1.052	0.320	27.940	28.260	-17.740	46.000	AVERAGE
4		2.927	0.370	22.730	23.100	-22.900	46.000	AVERAGE
5		5.931	0.460	21.220	21.680	-28.320	50.000	AVERAGE
6		14.795	0.990	22.250	23.240	-26.760	50.000	AVERAGE

## Note:

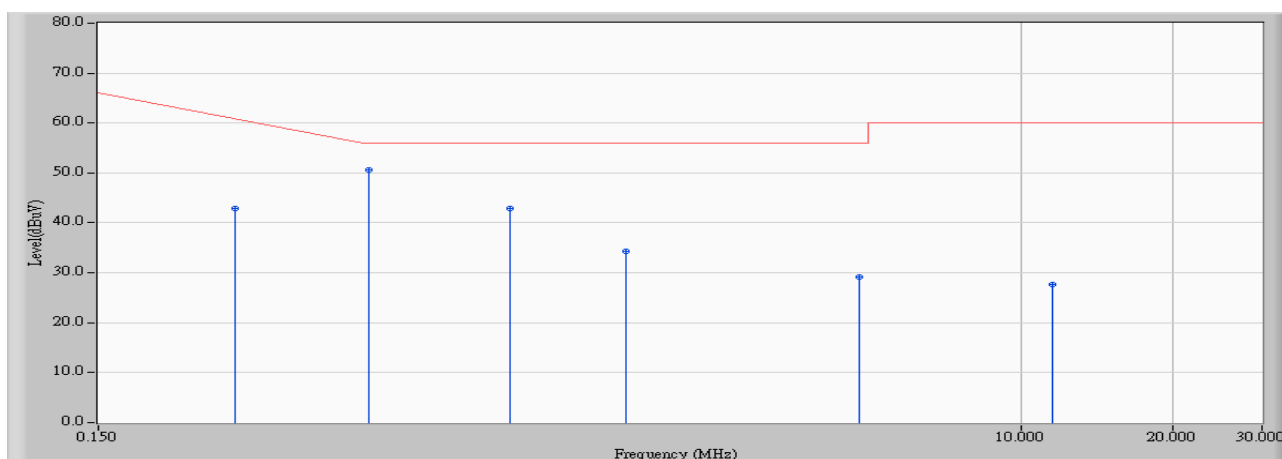
1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 07:12
Limit : CISPR_B_00M_QP	Margin : 10
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 3





Site : SR-1	Time : 2008/04/26 - 07:12
Limit : CISPR_B_00M_QP	Margin : 0
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 3

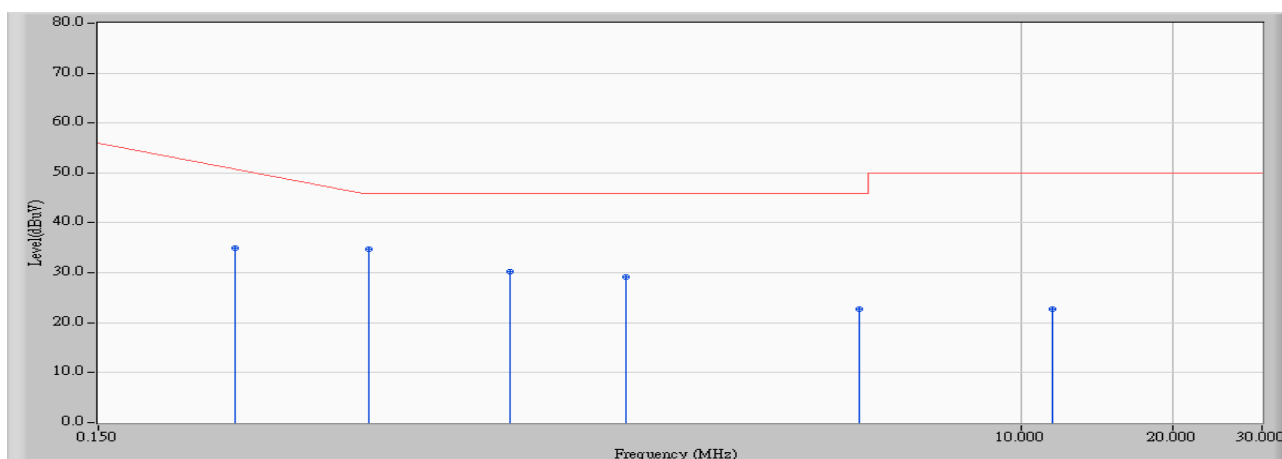


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.279	0.300	42.520	42.820	-19.494	62.314	QUASIPeAK
2	*	0.513	0.310	50.290	50.600	-5.400	56.000	QUASIPeAK
3		0.978	0.320	42.500	42.820	-13.180	56.000	QUASIPeAK
4		1.658	0.340	34.050	34.390	-21.610	56.000	QUASIPeAK
5		4.798	0.410	28.700	29.110	-26.890	56.000	QUASIPeAK
6		11.552	0.597	26.970	27.567	-32.433	60.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 07:12
Limit : CISPR_B_00M_AV	Margin : 0
EUT : Notebook	Probe : LISN-N(023) - Line2
Power : AC 230V/50Hz	Note : Mode 3



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.279	0.300	34.600	34.900	-17.414	52.314	AVERAGE
2	*	0.513	0.310	34.440	34.750	-11.250	46.000	AVERAGE
3		0.978	0.320	29.950	30.270	-15.730	46.000	AVERAGE
4		1.658	0.340	28.850	29.190	-16.810	46.000	AVERAGE
5		4.798	0.410	22.320	22.730	-23.270	46.000	AVERAGE
6		11.552	0.597	22.190	22.787	-27.213	50.000	AVERAGE

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

**3.7. Test Photograph**

Test Mode : Mode 1:

Description : Front View of Conducted Test



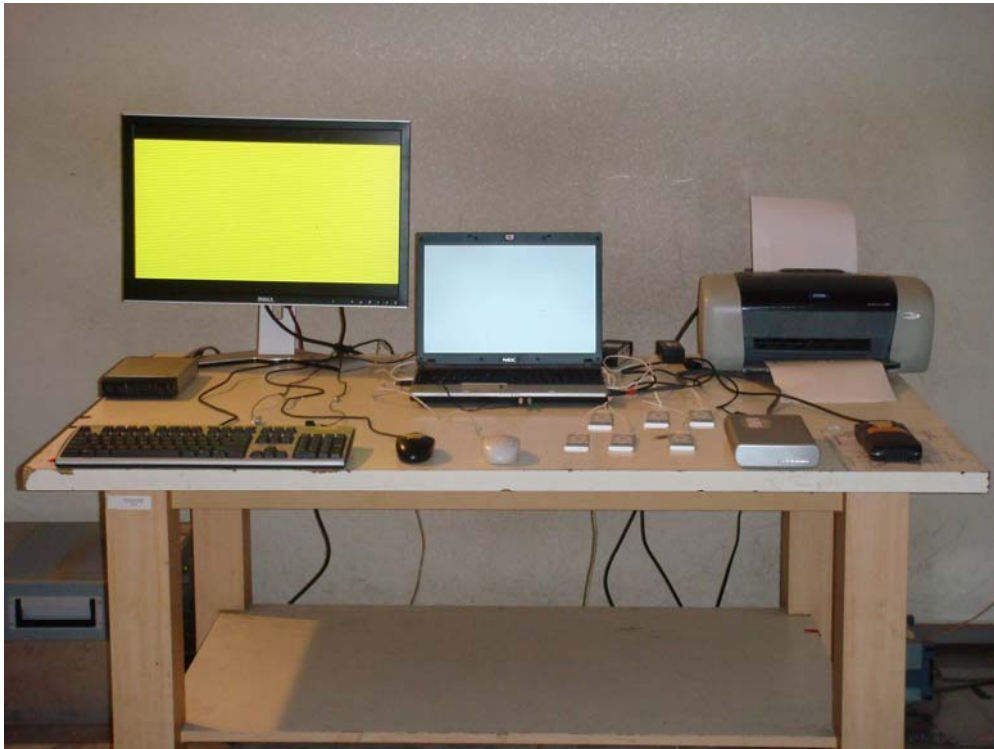
Test Mode : Mode 1:

Description : Back View of Conducted Test



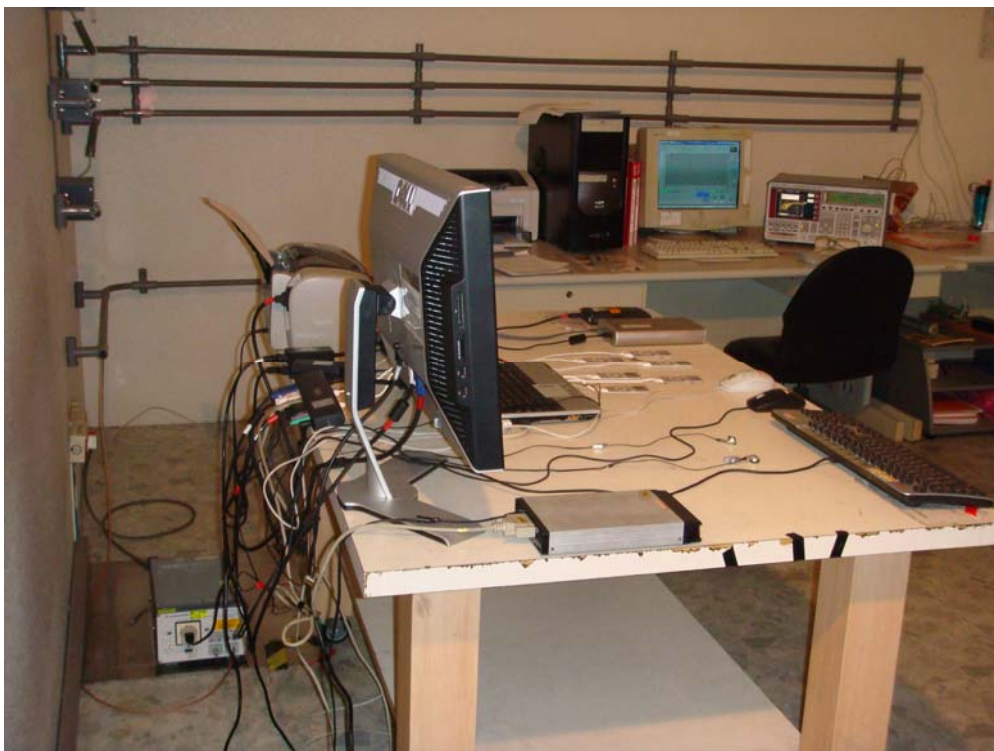
Test Mode : Mode 2:

Description : Front View of Conducted Test



Test Mode : Mode 2:

Description : Back View of Conducted Test



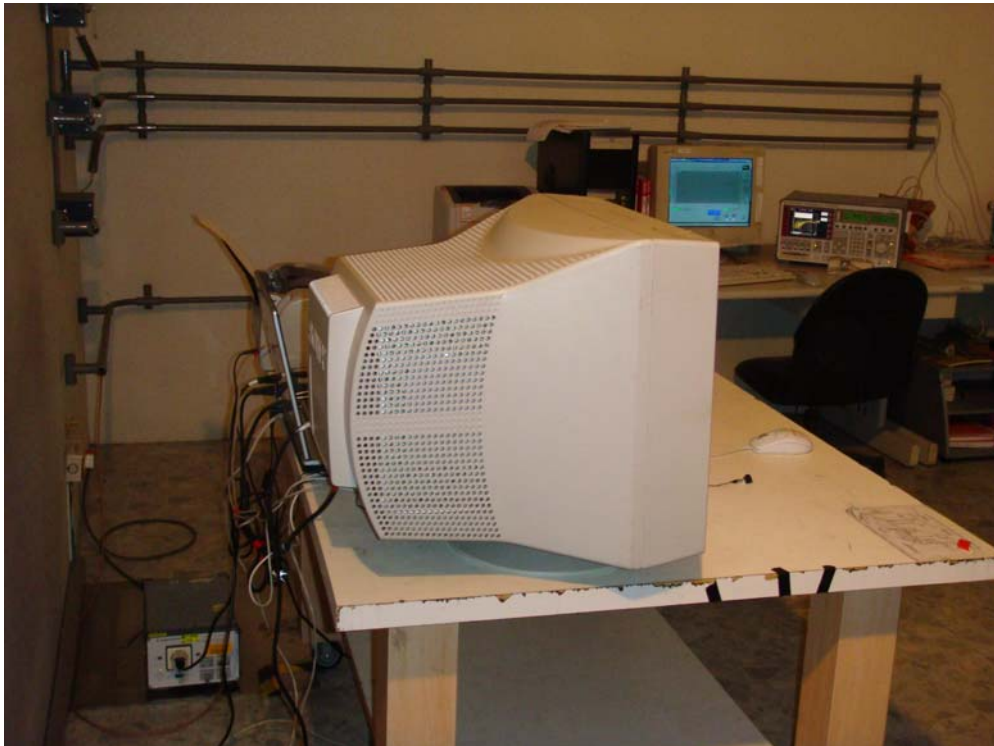
Test Mode : Mode 3:

Description : Front View of Conducted Test



Test Mode : Mode 3:

Description : Back View of Conducted Test



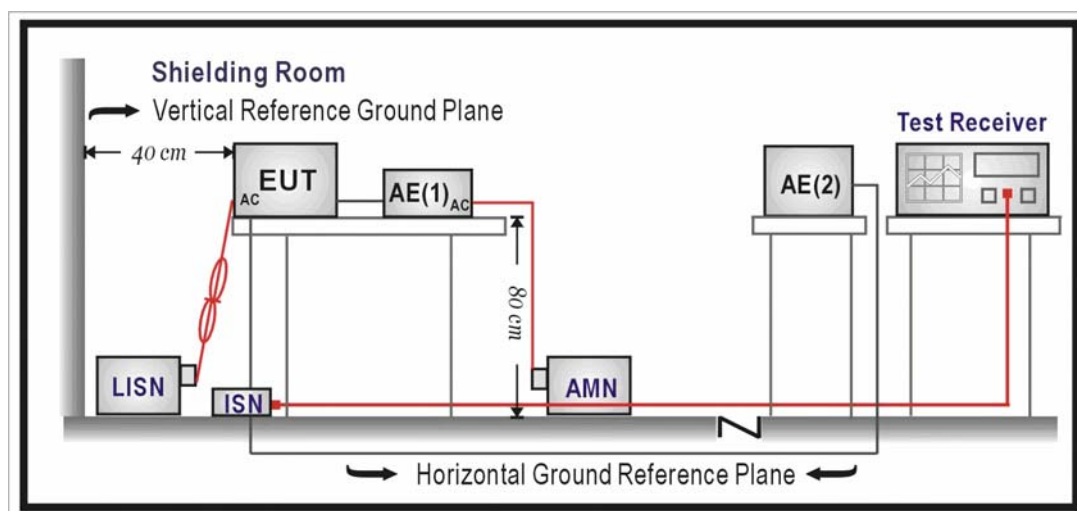


## 4. Conducted Emissions (Telecommunication Ports)

### 4.1. Test Specification

According to EMC Standard : EN 55022

### 4.2. Test Setup



### 4.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	84 – 74	74 – 64
0.50 - 30	74	64

Remarks:

The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz.

#### **4.4. Test Procedure**

##### **Telecommunication Port:**

The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN, which is 150 ohm impedance.

Both alternative cables are tested related to the LCL requested. The measurement range is from 150kHz to 30MHz. The bandwidth of measurement is set to 9kHz.

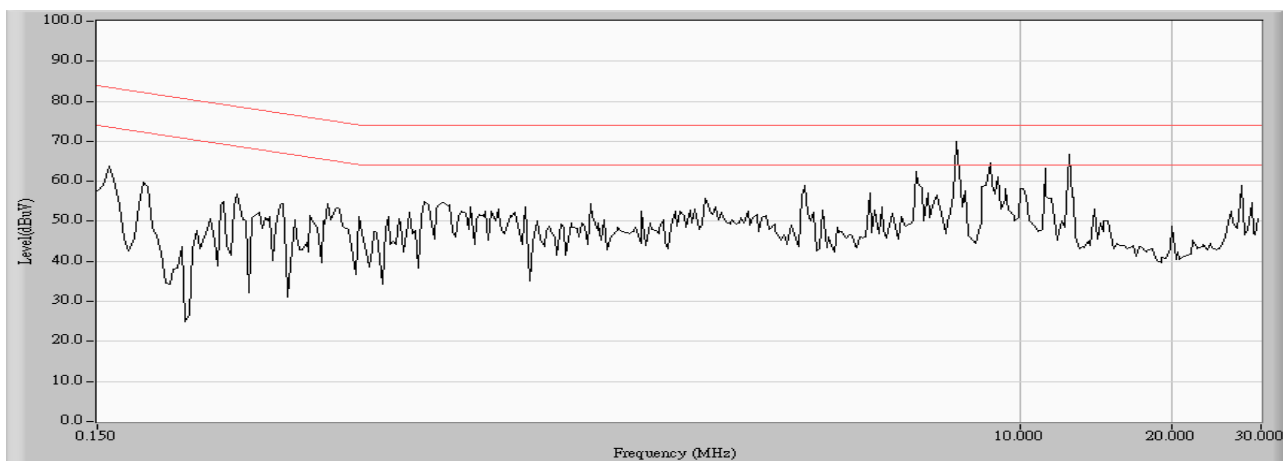
The 60dB LCL ISN is used for cat. 5 cable, 50dB LCL ISN is used for cat. 3 and 80dB LCL is used for alternative one.

#### **4.5. Deviation from Test Standard**

No deviation.

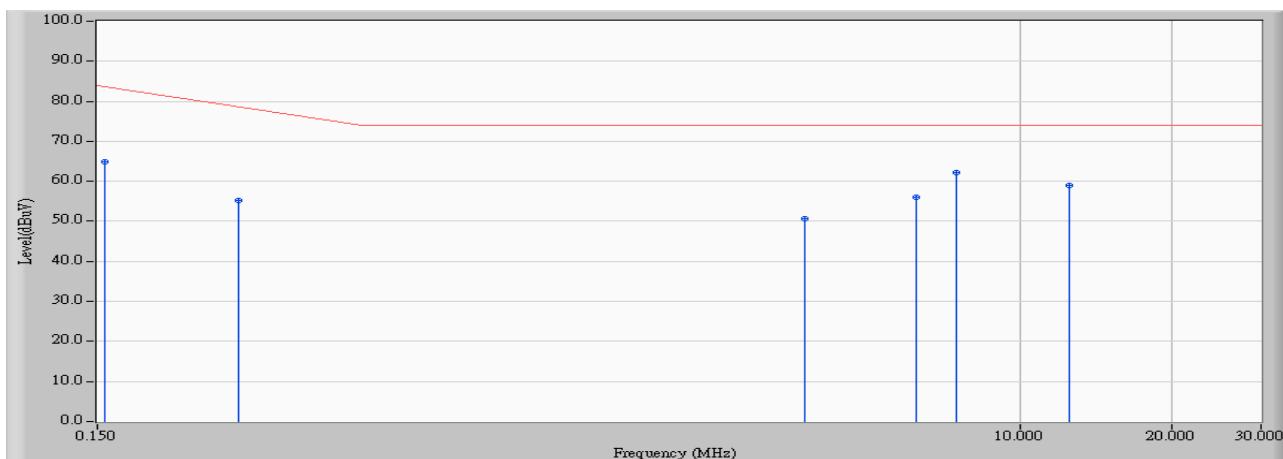
#### 4.6. Test Result

Site : SR-1	Time : 2008/04/03 - 15:36
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 10M





Site : SR-1	Time : 2008/04/03 - 15:38
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 10M

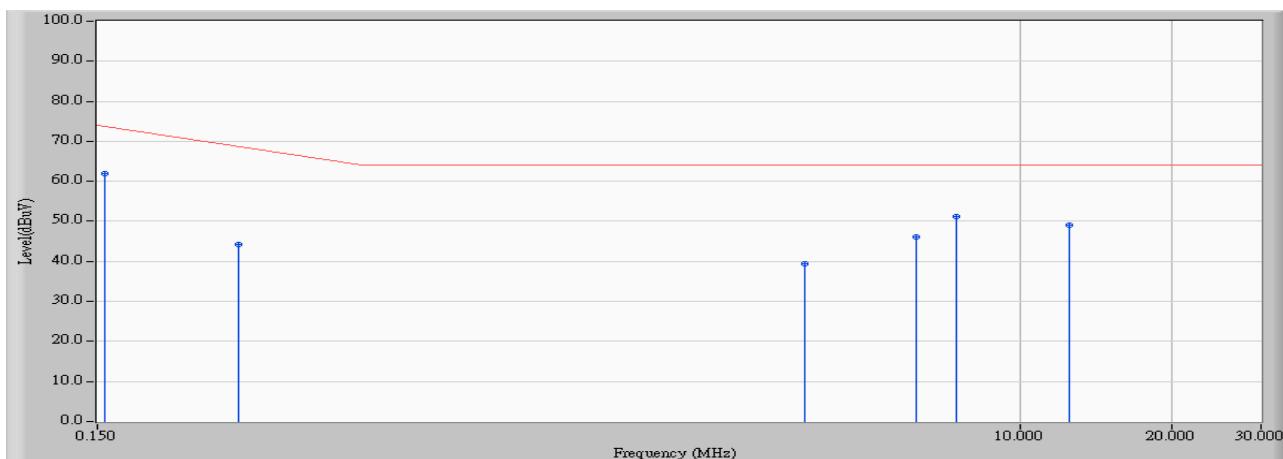


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.155	9.968	54.960	64.928	-18.929	83.857	QUASIPeAK
2		0.285	9.935	45.370	55.305	-24.838	80.143	QUASIPeAK
3		3.752	9.890	40.680	50.570	-23.430	74.000	QUASIPeAK
4		6.248	9.870	46.160	56.030	-17.970	74.000	QUASIPeAK
5	*	7.502	9.860	52.230	62.090	-11.910	74.000	QUASIPeAK
6		12.502	9.953	49.020	58.973	-15.027	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:38
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 10M

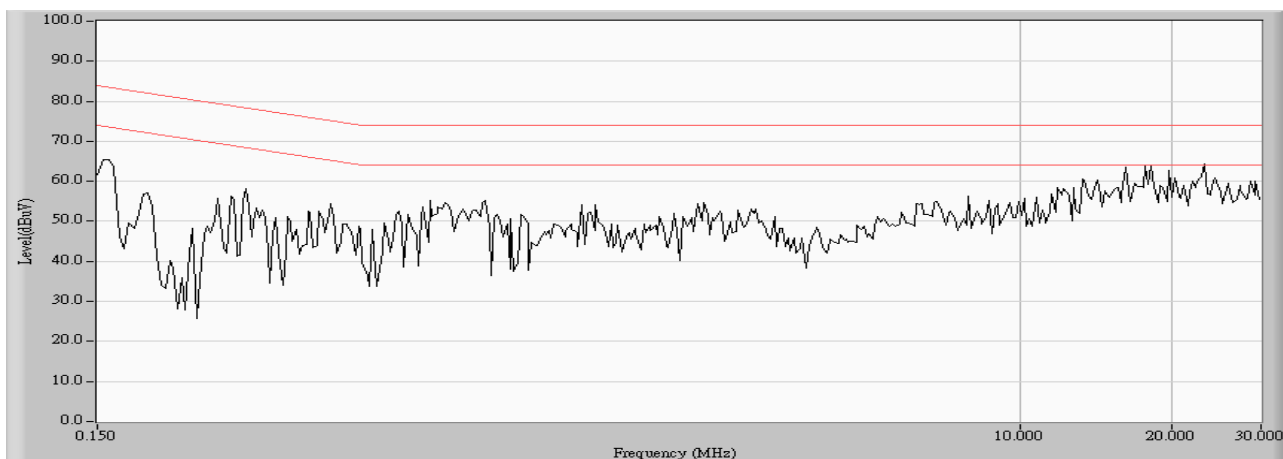


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.155	9.968	51.990	61.958	-11.899	73.857	AVERAGE
2		0.285	9.935	34.430	44.365	-25.778	70.143	AVERAGE
3		3.752	9.890	29.640	39.530	-24.470	64.000	AVERAGE
4		6.248	9.870	36.190	46.060	-17.940	64.000	AVERAGE
5		7.502	9.860	41.300	51.160	-12.840	64.000	AVERAGE
6		12.502	9.953	39.030	48.983	-15.017	64.000	AVERAGE

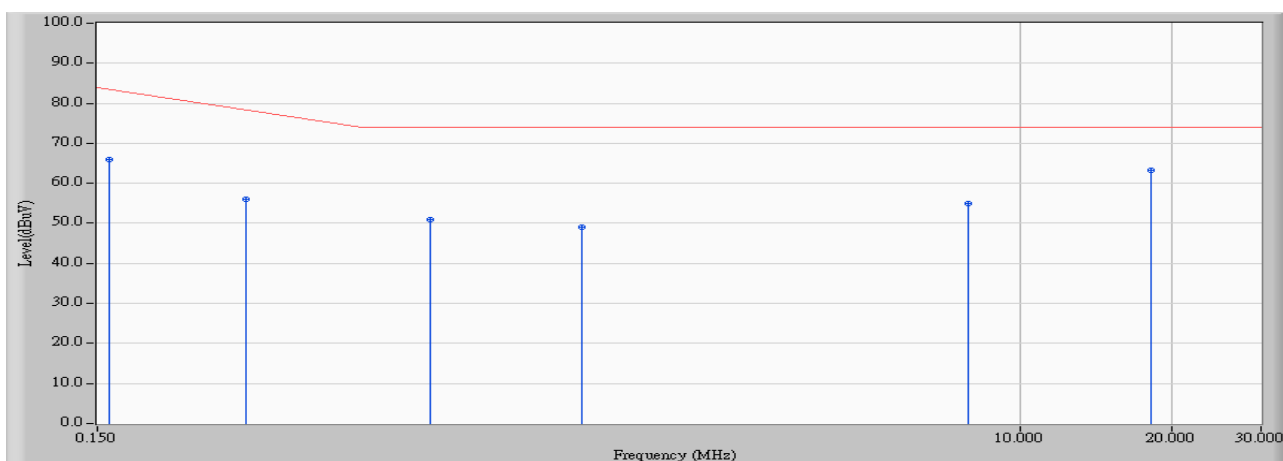
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:27
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 100M



Engineer :	
Site : SR-1	Time : 2008/04/03 - 15:28
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 100M

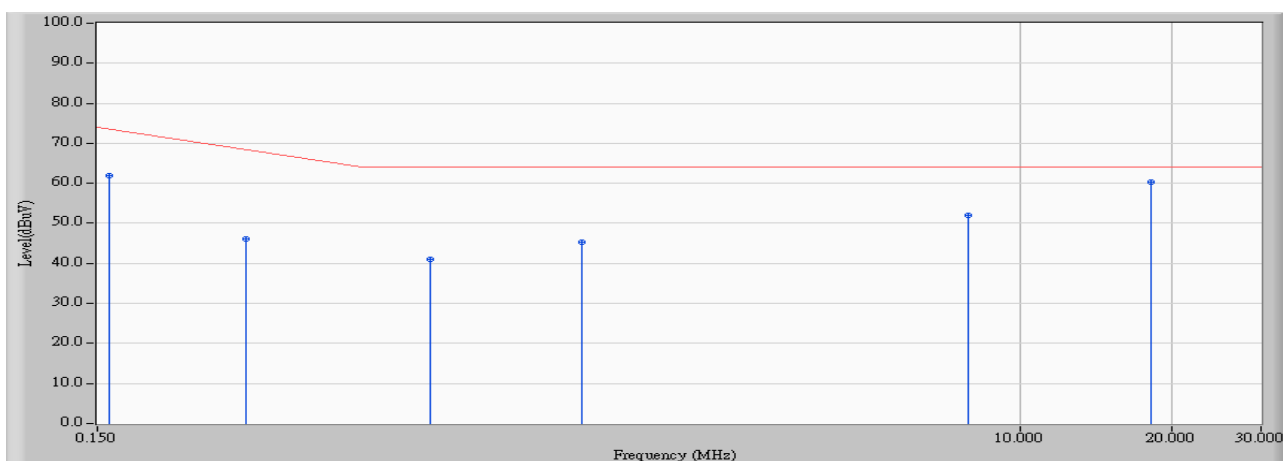


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	10.205	55.850	66.055	-17.716	83.771	QUASIPeAK
2		0.295	10.152	45.930	56.082	-23.775	79.857	QUASIPeAK
3		0.685	10.081	40.900	50.981	-23.019	74.000	QUASIPeAK
4		1.361	10.040	38.940	48.980	-25.020	74.000	QUASIPeAK
5		7.923	9.990	44.850	54.840	-19.160	74.000	QUASIPeAK
6	*	18.244	10.150	53.240	63.390	-10.610	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer :	
Site : SR-1	Time : 2008/04/03 - 15:28
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 100M

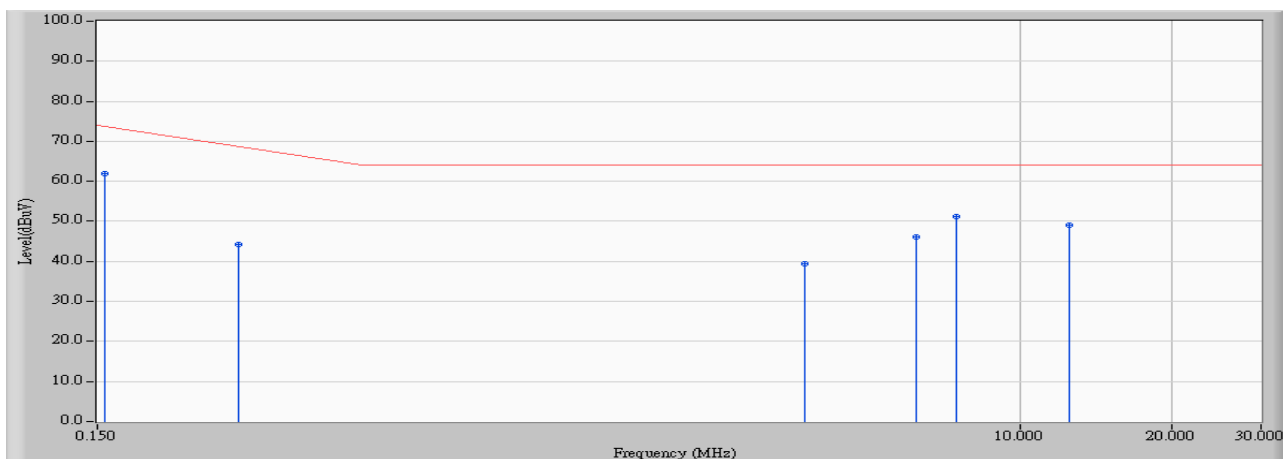


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	10.205	51.820	62.025	-11.746	73.771	AVERAGE
2		0.295	10.152	36.070	46.222	-23.635	69.857	AVERAGE
3		0.685	10.081	30.830	40.911	-23.089	64.000	AVERAGE
4		1.361	10.040	35.310	45.350	-18.650	64.000	AVERAGE
5		7.923	9.990	41.910	51.900	-12.100	64.000	AVERAGE
6	*	18.244	10.150	50.210	60.360	-3.640	64.000	AVERAGE

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:38
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 1, Telecom

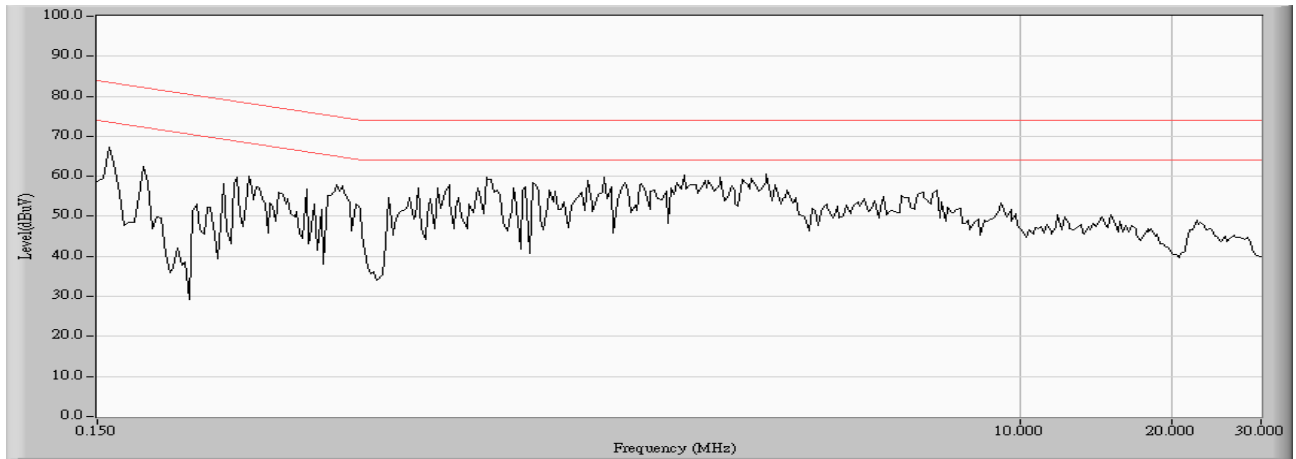


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV)	Margin (dB)	Limit (dBμV)	Detector Type
1	*	0.155	9.968	51.990	61.958	-11.899	73.857	AVERAGE
2		0.285	9.935	34.430	44.365	-25.778	70.143	AVERAGE
3		3.752	9.890	29.640	39.530	-24.470	64.000	AVERAGE
4		6.248	9.870	36.190	46.060	-17.940	64.000	AVERAGE
5		7.502	9.860	41.300	51.160	-12.840	64.000	AVERAGE
6		12.502	9.953	39.030	48.983	-15.017	64.000	AVERAGE

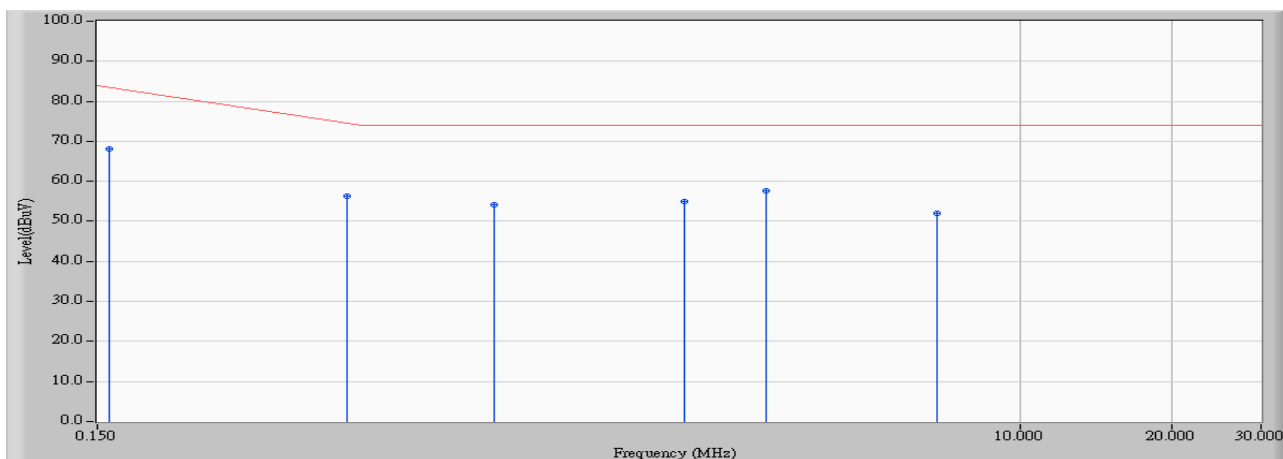
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:47
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 1, Telecom



Site : SR-1	Time : 2008/04/03 - 15:49
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 1, Telecom



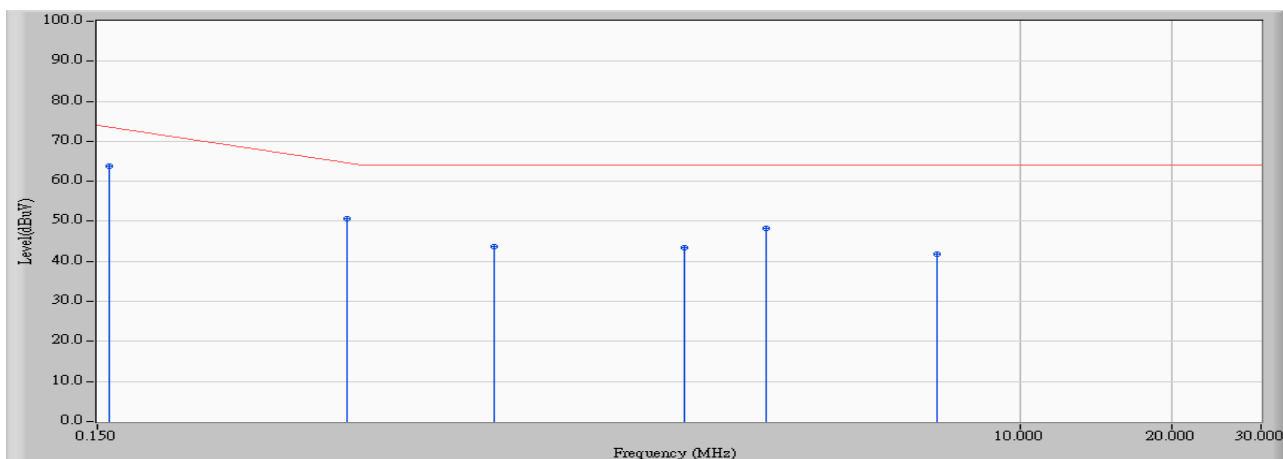
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.158	10.027	58.140	68.167	-15.604	83.771	QUASIPeAK
2		0.468	9.953	46.460	56.413	-18.501	74.914	QUASIPeAK
3		0.914	9.930	44.180	54.110	-19.890	74.000	QUASIPeAK
4		2.173	9.920	45.120	55.040	-18.960	74.000	QUASIPeAK
5		3.162	9.910	47.850	57.760	-16.240	74.000	QUASIPeAK
6		6.877	9.890	42.060	51.950	-22.050	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor



Site : SR-1	Time : 2008/04/03 - 15:49
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 1, Telecom

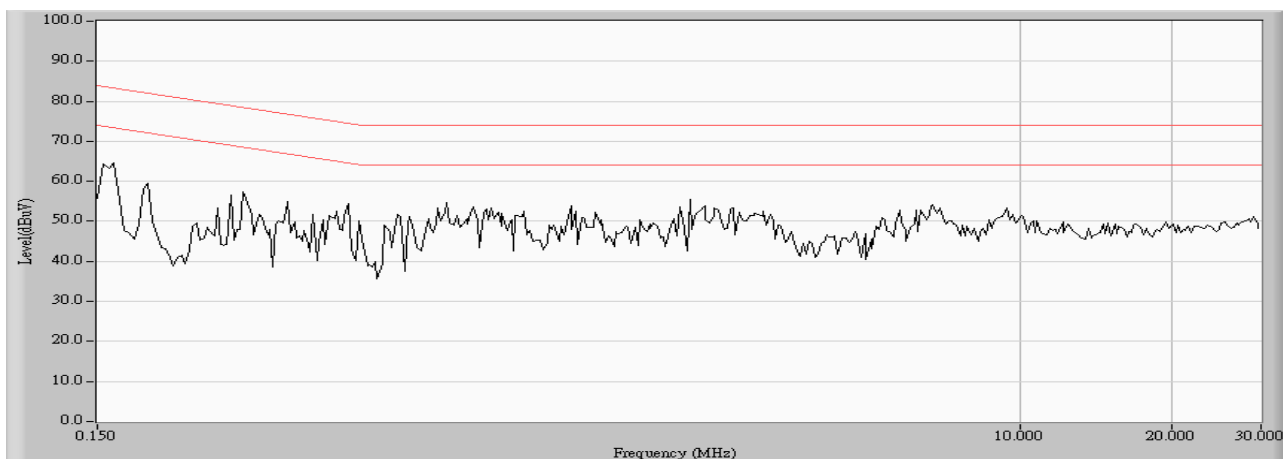


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.158	10.027	53.890	63.917	-9.854	73.771	AVERAGE
2		0.468	9.953	40.710	50.663	-14.251	64.914	AVERAGE
3		0.914	9.930	33.770	43.700	-20.300	64.000	AVERAGE
4		2.173	9.920	33.450	43.370	-20.630	64.000	AVERAGE
5		3.162	9.910	38.480	48.390	-15.610	64.000	AVERAGE
6		6.877	9.890	31.960	41.850	-22.150	64.000	AVERAGE

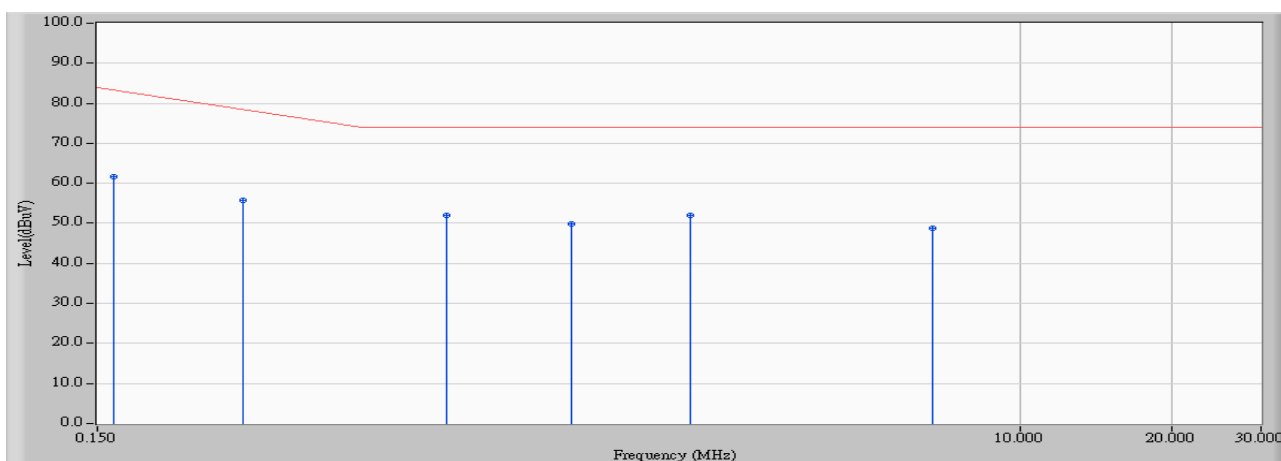
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:19
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 1G



Site : SR-1	Time : 2008/04/03 - 15:21
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 1G

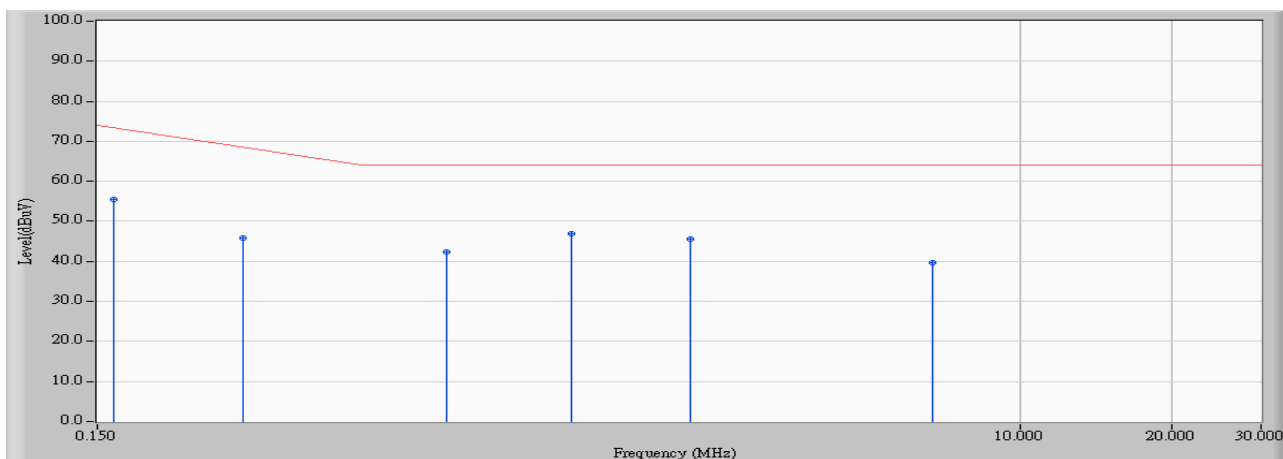


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.162	10.202	51.450	61.652	-22.005	83.657	QUASIPeAK
2		0.291	10.153	45.580	55.733	-24.238	79.971	QUASIPeAK
3	*	0.736	10.080	41.970	52.050	-21.950	74.000	QUASIPeAK
4		1.298	10.045	39.790	49.835	-24.165	74.000	QUASIPeAK
5		2.228	10.010	41.910	51.920	-22.080	74.000	QUASIPeAK
6		6.740	9.980	38.710	48.690	-25.310	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:21
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 1, 1G

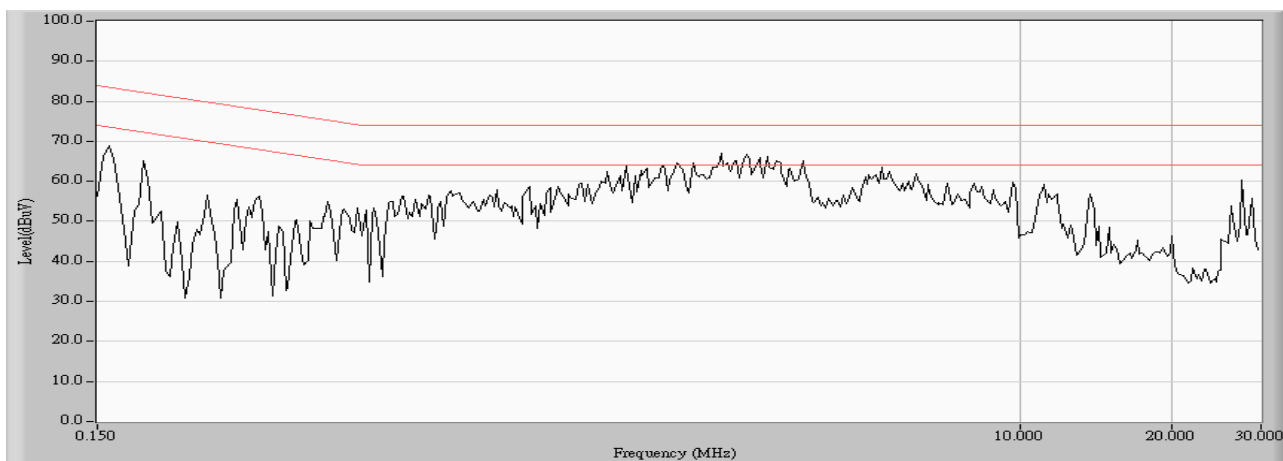


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.162	10.202	45.370	55.572	-18.085	73.657	AVERAGE
2		0.291	10.153	35.600	45.753	-24.218	69.971	AVERAGE
3		0.736	10.080	32.270	42.350	-21.650	64.000	AVERAGE
4	*	1.298	10.045	36.760	46.805	-17.195	64.000	AVERAGE
5		2.228	10.010	35.660	45.670	-18.330	64.000	AVERAGE
6		6.740	9.980	29.790	39.770	-24.230	64.000	AVERAGE

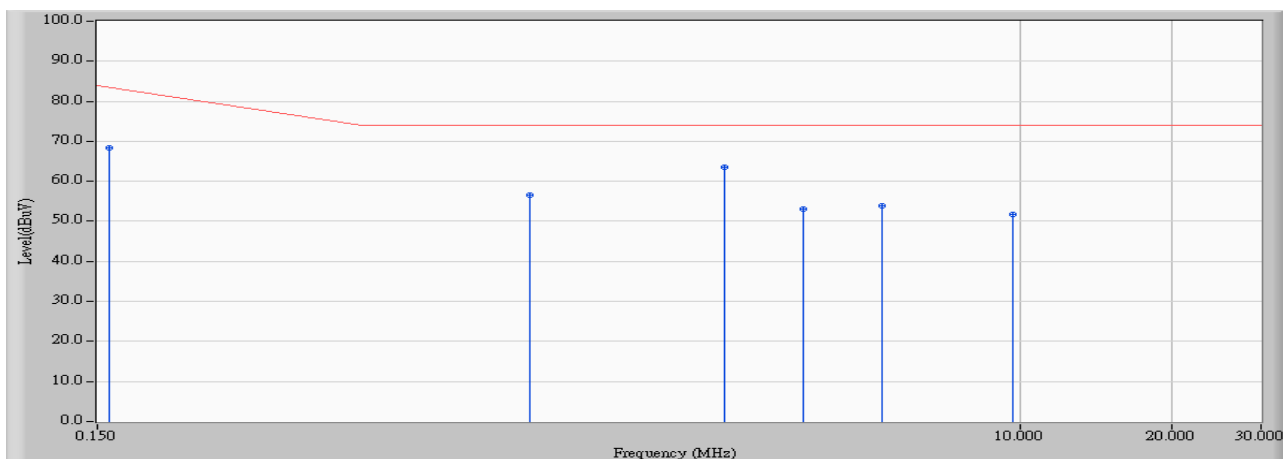
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:04
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 10M



Site : SR-1	Time : 2008/04/03 - 15:06
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 10M

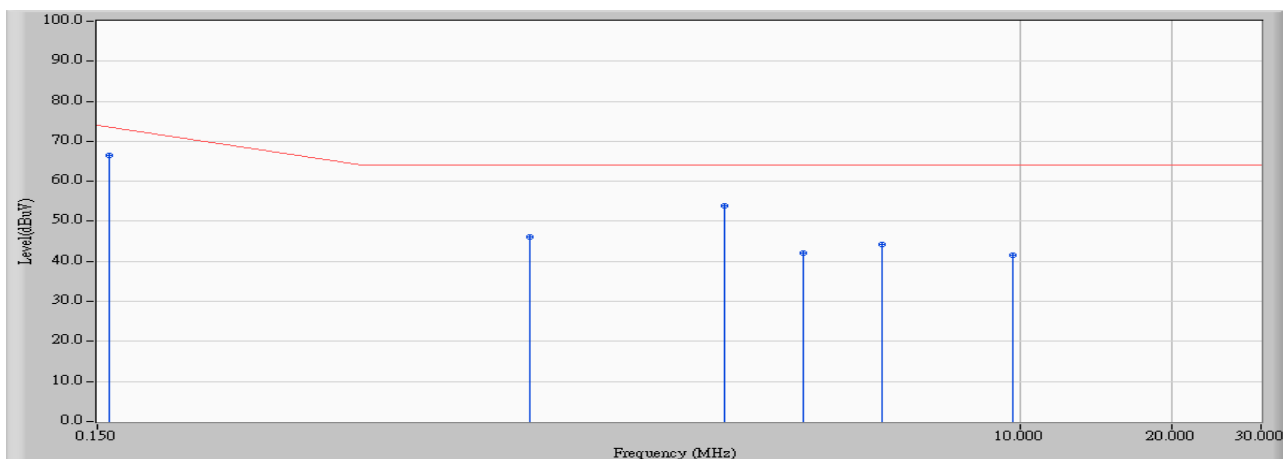


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	9.967	58.350	68.317	-15.454	83.771	QUASIPeAK
2		1.072	9.900	46.710	56.610	-17.390	74.000	QUASIPeAK
3	*	2.602	9.900	53.560	63.460	-10.540	74.000	QUASIPeAK
4		3.728	9.890	43.190	53.080	-20.920	74.000	QUASIPeAK
5		5.338	9.880	44.110	53.990	-20.010	74.000	QUASIPeAK
6		9.673	9.850	42.010	51.860	-22.140	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:06
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 10M

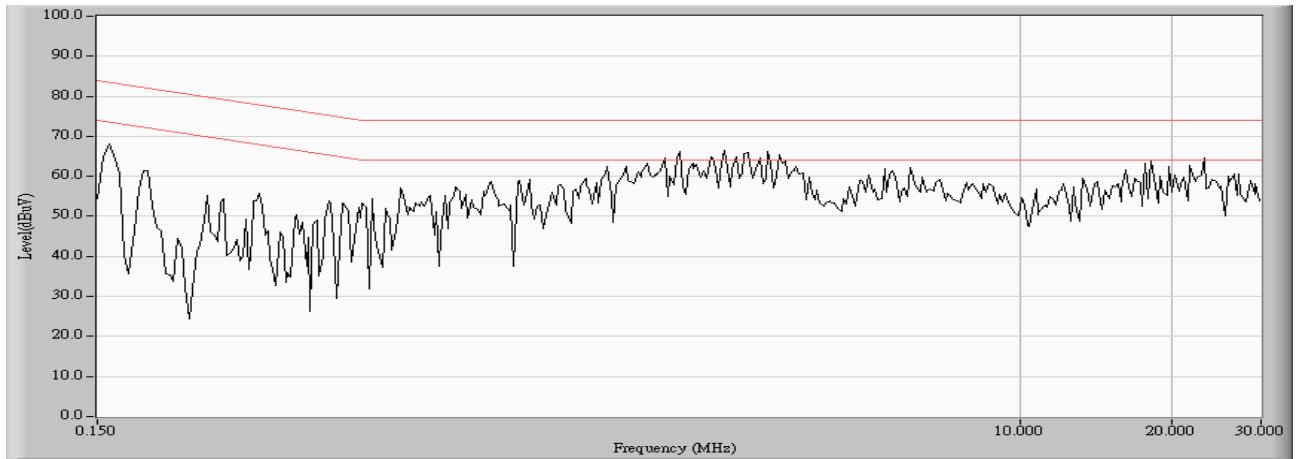


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.158	9.967	56.510	66.477	-7.294	73.771	AVERAGE
2		1.072	9.900	36.240	46.140	-17.860	64.000	AVERAGE
3		2.602	9.900	43.980	53.880	-10.120	64.000	AVERAGE
4		3.728	9.890	32.260	42.150	-21.850	64.000	AVERAGE
5		5.338	9.880	34.330	44.210	-19.790	64.000	AVERAGE
6		9.673	9.850	31.590	41.440	-22.560	64.000	AVERAGE

Note:

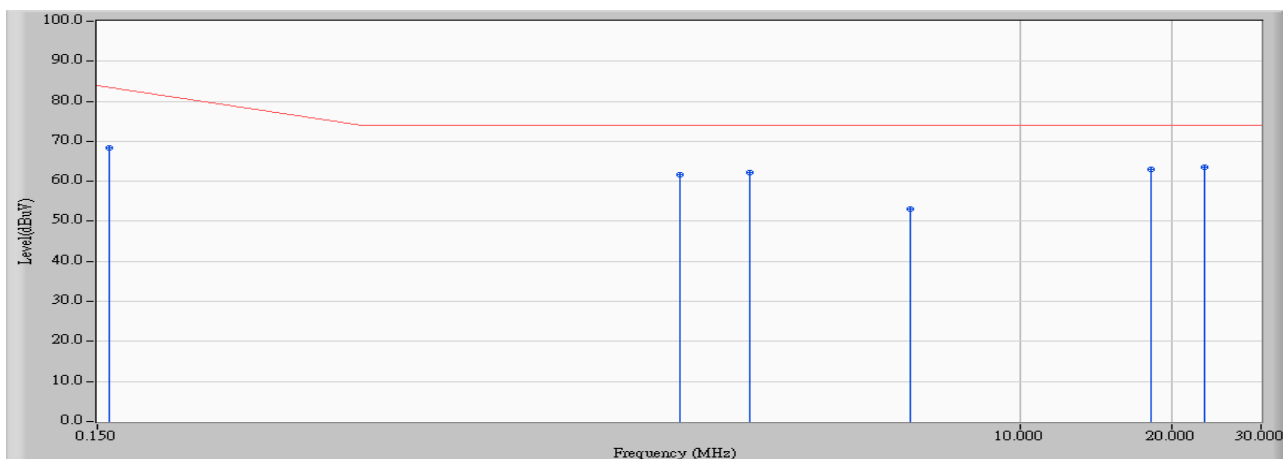
1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:08
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 100M





Site : SR-1	Time : 2008/04/03 - 15:10
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 100M

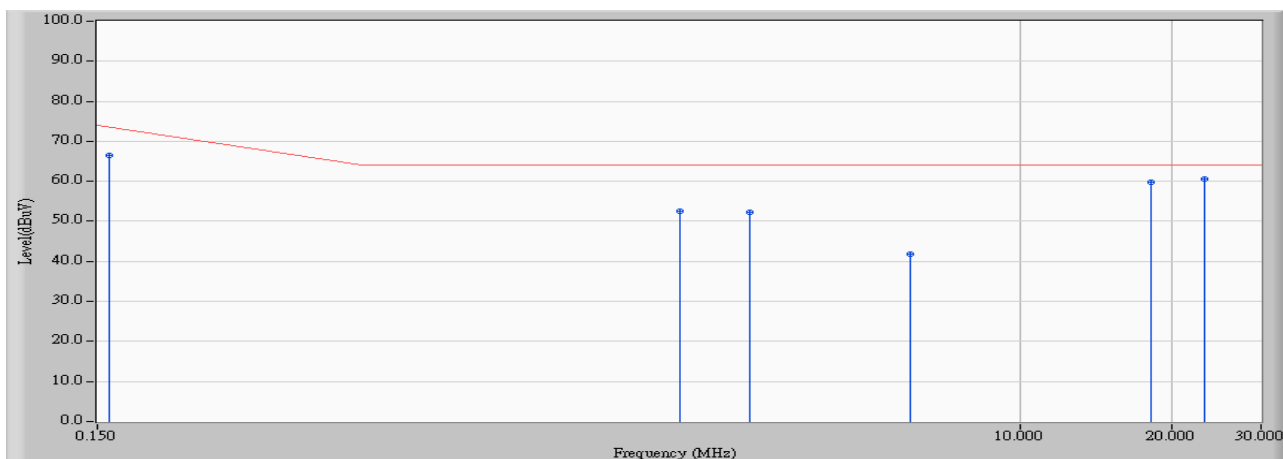


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	9.967	58.410	68.377	-15.394	83.771	QUASIPeAK
2		2.131	9.910	51.830	61.740	-12.260	74.000	QUASIPeAK
3		2.917	9.900	52.220	62.120	-11.880	74.000	QUASIPeAK
4		6.088	9.870	43.300	53.170	-20.830	74.000	QUASIPeAK
5		18.244	9.990	52.960	62.950	-11.050	74.000	QUASIPeAK
6	*	23.127	9.970	53.620	63.590	-10.410	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:10
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 100M

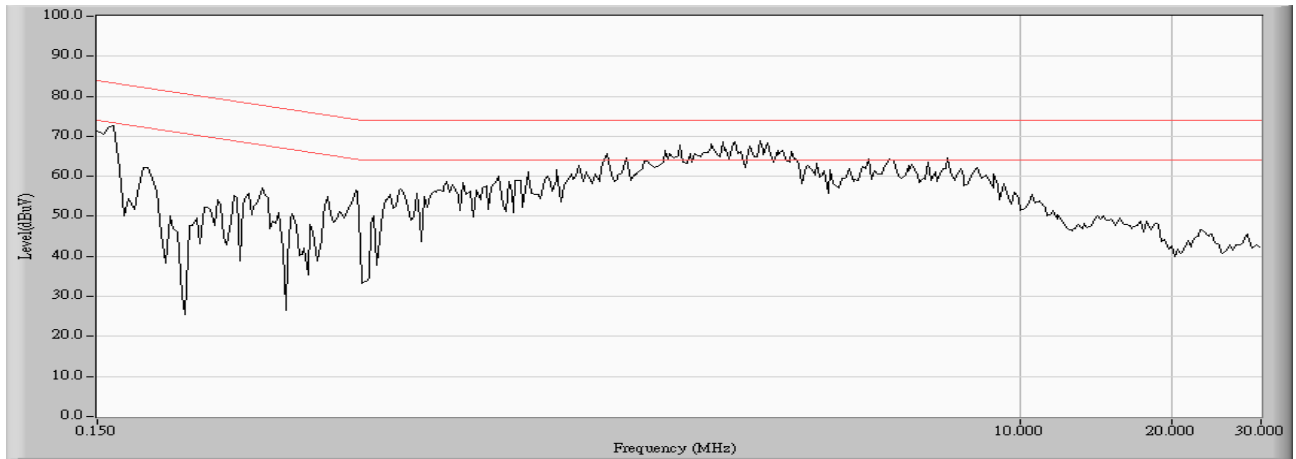


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	9.967	56.580	66.547	-7.224	73.771	AVERAGE
2		2.131	9.910	42.690	52.600	-11.400	64.000	AVERAGE
3		2.917	9.900	42.340	52.240	-11.760	64.000	AVERAGE
4		6.088	9.870	31.990	41.860	-22.140	64.000	AVERAGE
5		18.244	9.990	49.780	59.770	-4.230	64.000	AVERAGE
6	*	23.127	9.970	50.620	60.590	-3.410	64.000	AVERAGE

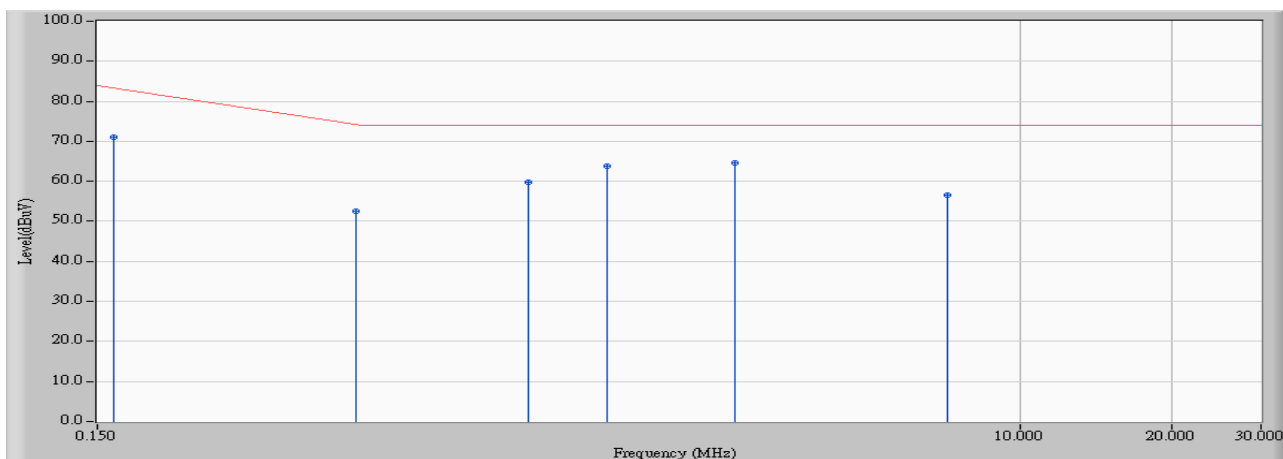
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 14:44
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 2, Telecom



Site : SR-1	Time : 2008/04/03 - 14:46
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 2, Telecom

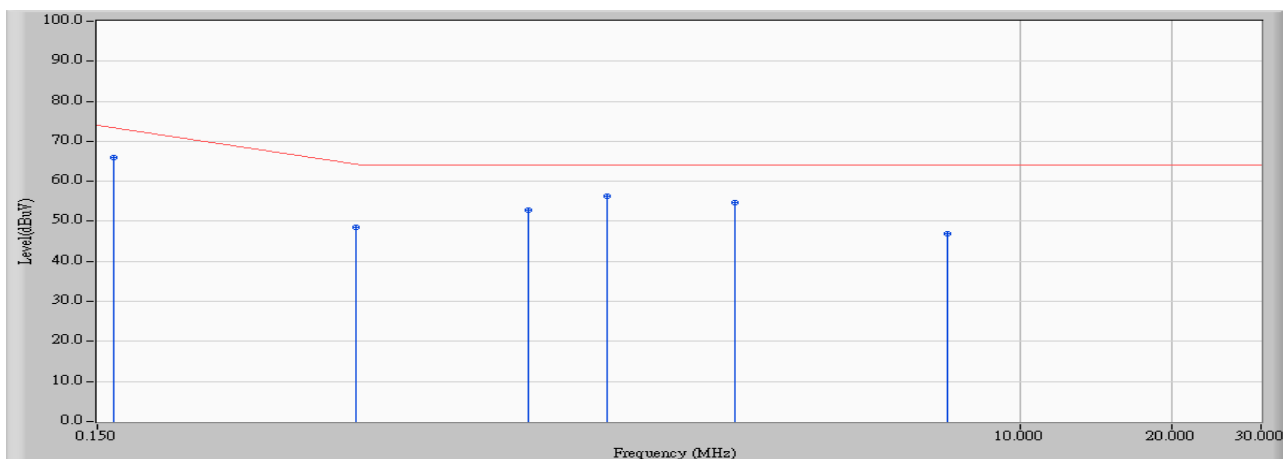


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV)	Margin (dB)	Limit (dBμV)	Detector Type
1		0.162	10.026	61.070	71.096	-12.561	83.657	QUASIPeAK
2		0.486	9.950	42.600	52.550	-21.850	74.400	QUASIPeAK
3		1.064	9.930	49.900	59.830	-14.170	74.000	QUASIPeAK
4		1.525	9.920	53.920	63.840	-10.160	74.000	QUASIPeAK
5	*	2.732	9.920	54.650	64.570	-9.430	74.000	QUASIPeAK
6		7.201	9.890	46.770	56.660	-17.340	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 14:46
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 2, Telecom

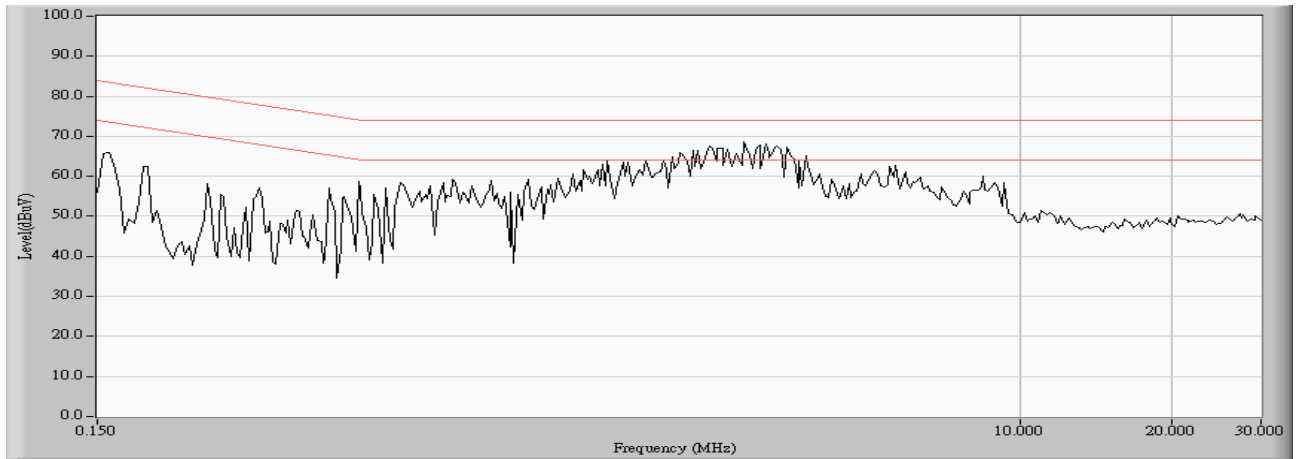


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.162	10.026	55.910	65.936	-7.721	73.657	AVERAGE
2		0.486	9.950	38.470	48.420	-15.980	64.400	AVERAGE
3		1.064	9.930	43.000	52.930	-11.070	64.000	AVERAGE
4	*	1.525	9.920	46.400	56.320	-7.680	64.000	AVERAGE
5		2.732	9.920	44.790	54.710	-9.290	64.000	AVERAGE
6		7.201	9.890	37.110	47.000	-17.000	64.000	AVERAGE

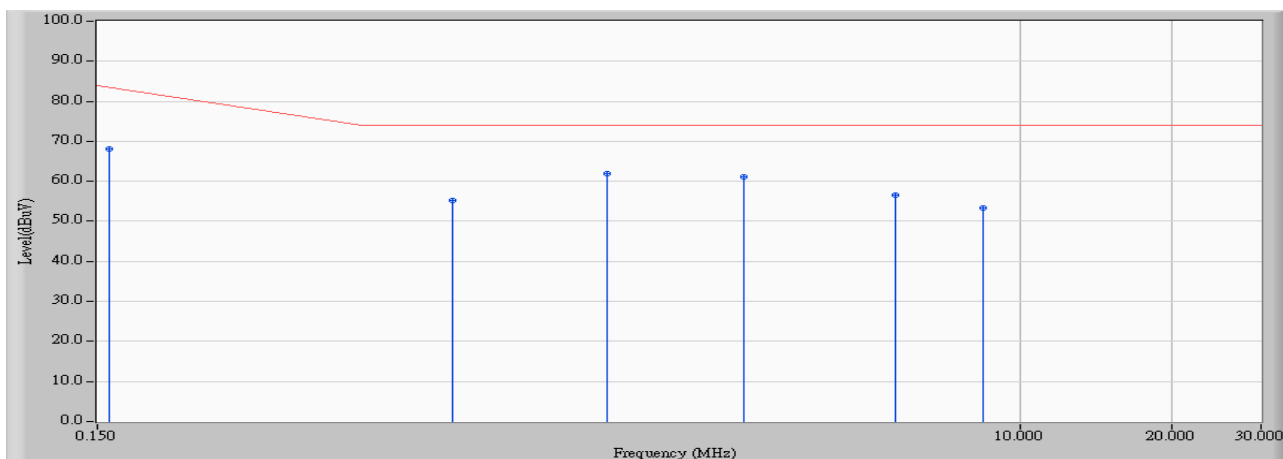
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:12
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 1G



Site : SR-1	Time : 2008/04/03 - 15:14
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 1G

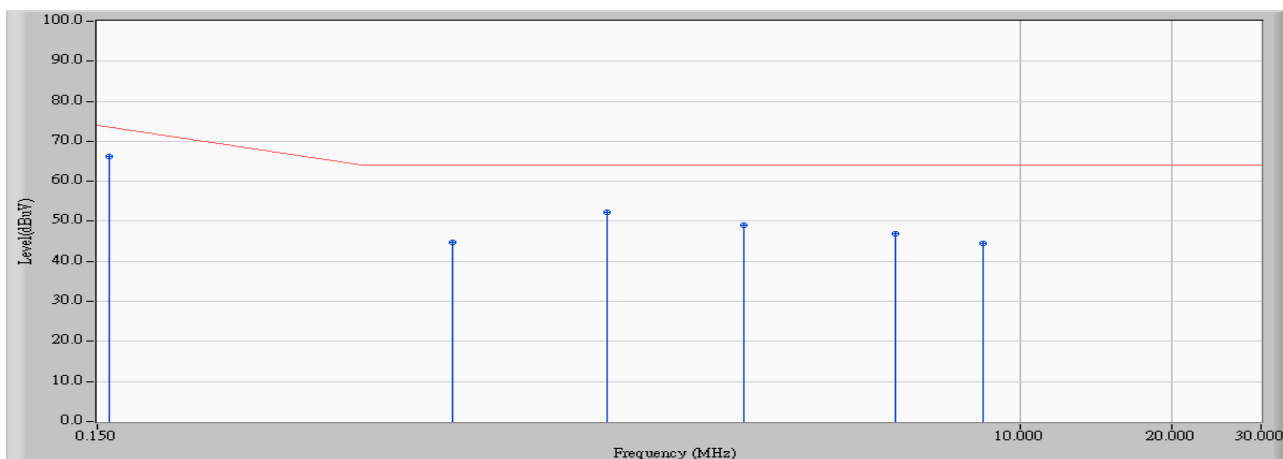


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV)	Margin (dB)	Limit (dBμV)	Detector Type
1		0.158	10.205	57.900	68.105	-15.666	83.771	QUASIPeAK
2		0.755	10.080	45.270	55.350	-18.650	74.000	QUASIPeAK
3	*	1.533	10.030	51.800	61.830	-12.170	74.000	QUASIPeAK
4		2.849	10.000	51.220	61.220	-12.780	74.000	QUASIPeAK
5		5.662	9.980	46.460	56.440	-17.560	74.000	QUASIPeAK
6		8.455	9.990	43.460	53.450	-20.550	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/03 - 15:14
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 2, 1G



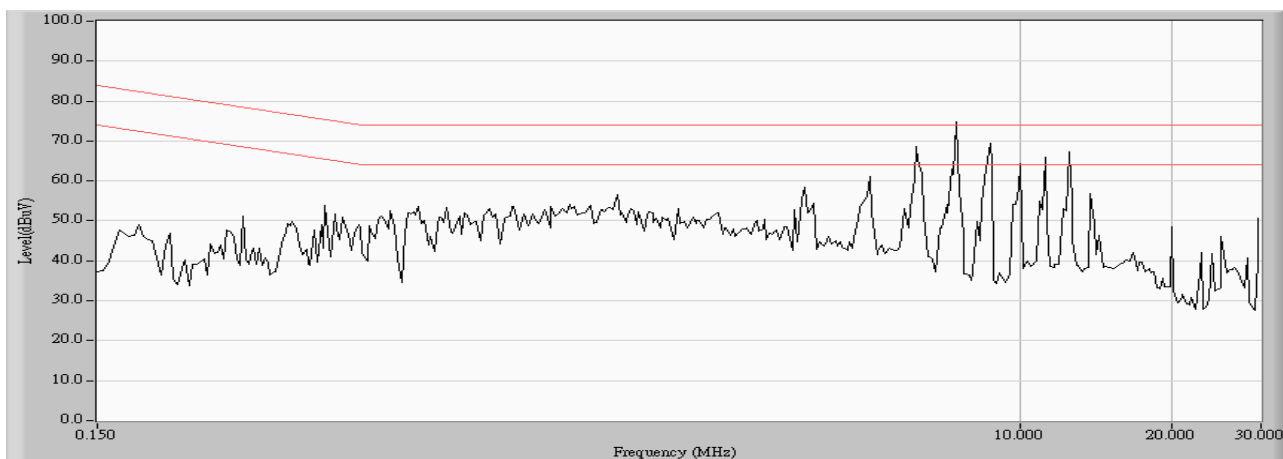
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.158	10.205	56.040	66.245	-7.526	73.771	AVERAGE
2		0.755	10.080	34.720	44.800	-19.200	64.000	AVERAGE
3		1.533	10.030	42.190	52.220	-11.780	64.000	AVERAGE
4		2.849	10.000	39.030	49.030	-14.970	64.000	AVERAGE
5		5.662	9.980	36.840	46.820	-17.180	64.000	AVERAGE
6		8.455	9.990	34.470	44.460	-19.540	64.000	AVERAGE

## Note:

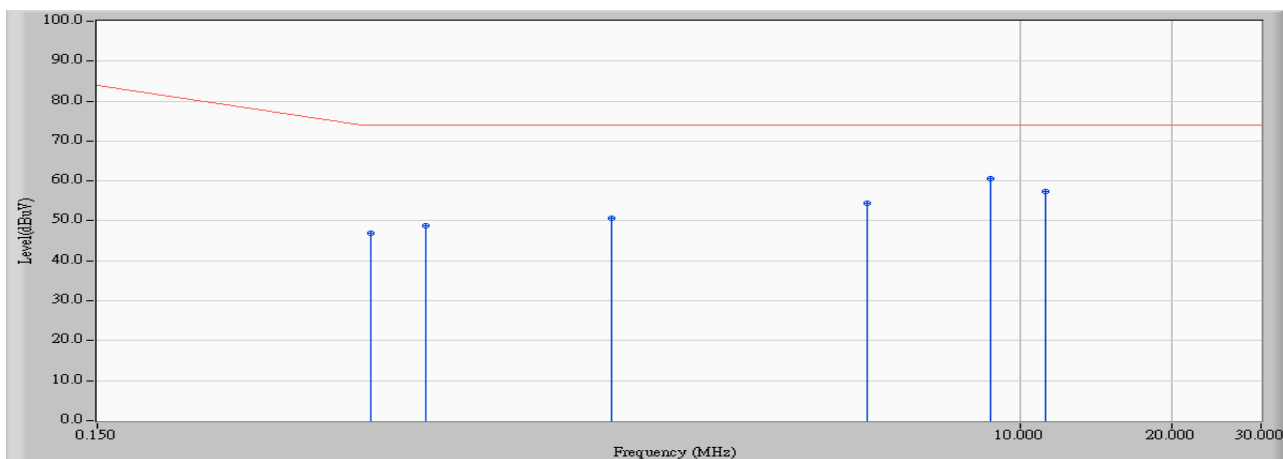
1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor



Site : SR-1	Time : 2008/04/26 - 12:41
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 10M



Site : SR-1	Time : 2008/04/26 - 12:44
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 10M

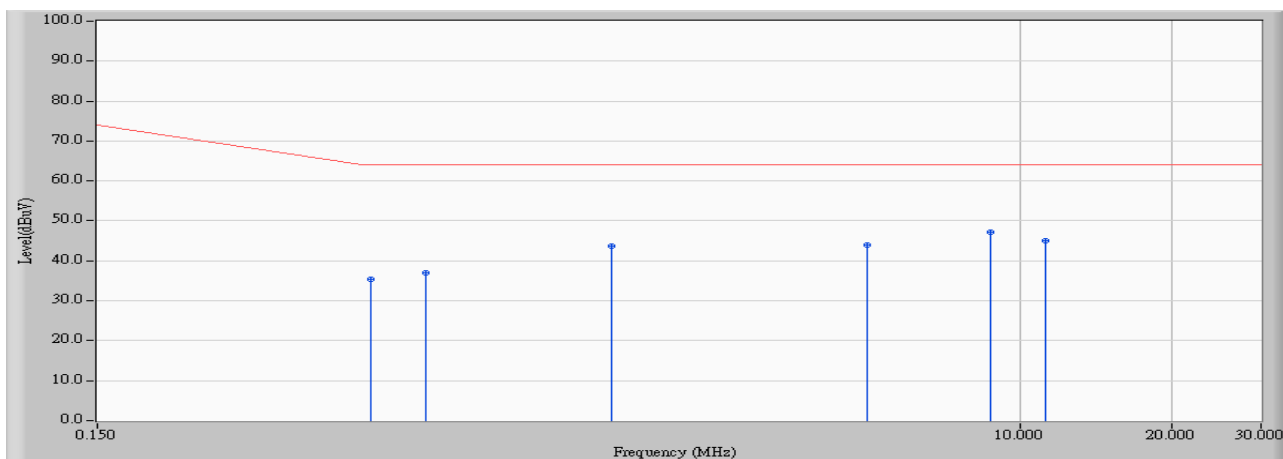


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV)	Margin (dB)	Limit (dBμV)	Detector Type
1		0.521	9.900	37.150	47.050	-26.950	74.000	QUASIPeAK
2		0.670	9.900	38.850	48.750	-25.250	74.000	QUASIPeAK
3		1.563	9.910	40.740	50.650	-23.350	74.000	QUASIPeAK
4		5.000	9.880	44.550	54.430	-19.570	74.000	QUASIPeAK
5	*	8.752	9.860	50.860	60.720	-13.280	74.000	QUASIPeAK
6		11.252	9.849	47.580	57.429	-16.571	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 12:44
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 10M

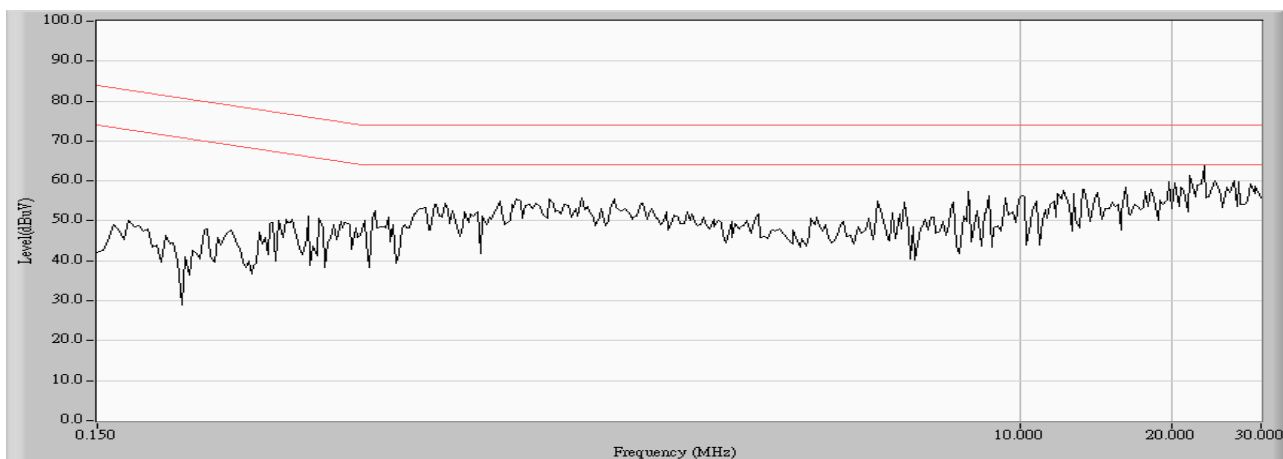


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.521	9.900	25.440	35.340	-28.660	64.000	AVERAGE
2		0.670	9.900	27.180	37.080	-26.920	64.000	AVERAGE
3		1.563	9.910	33.920	43.830	-20.170	64.000	AVERAGE
4		5.000	9.880	33.990	43.870	-20.130	64.000	AVERAGE
5	*	8.752	9.860	37.330	47.190	-16.810	64.000	AVERAGE
6		11.252	9.849	35.200	45.049	-18.951	64.000	AVERAGE

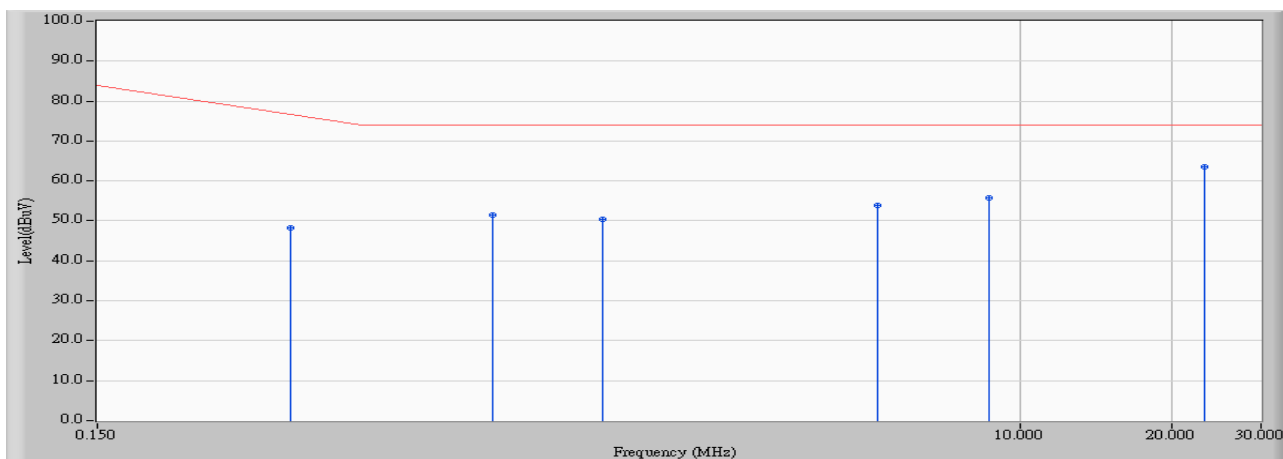
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 12:34
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 100M



Site : SR-1	Time : 2008/04/26 - 12:37
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 100M

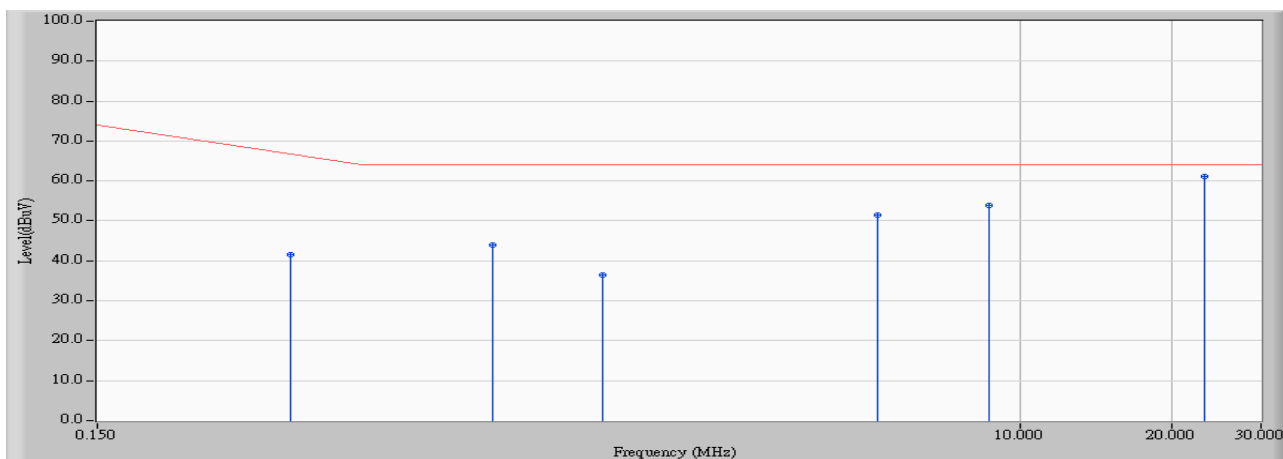


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.361	9.920	38.390	48.310	-29.661	77.971	QUASIPeAK
2		0.908	9.900	41.560	51.460	-22.540	74.000	QUASIPeAK
3		1.502	9.903	40.380	50.283	-23.717	74.000	QUASIPeAK
4		5.236	9.880	44.020	53.900	-20.100	74.000	QUASIPeAK
5		8.716	9.860	45.880	55.740	-18.260	74.000	QUASIPeAK
6	*	23.129	9.970	53.570	63.540	-10.460	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 12:37
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T4 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 100M

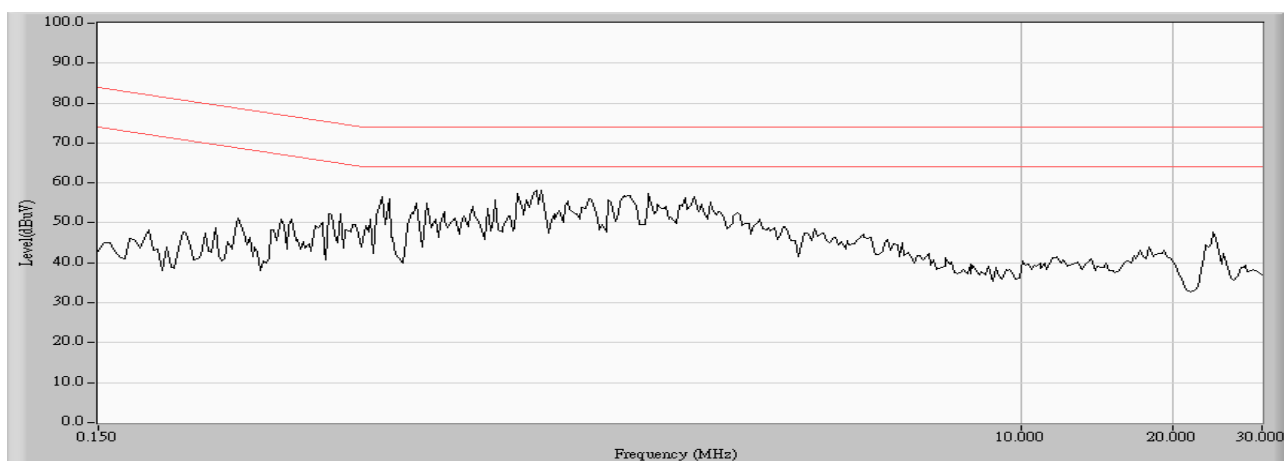


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.361	9.920	31.520	41.440	-26.531	67.971	AVERAGE
2		0.908	9.900	34.010	43.910	-20.090	64.000	AVERAGE
3		1.502	9.903	26.610	36.513	-27.487	64.000	AVERAGE
4		5.236	9.880	41.600	51.480	-12.520	64.000	AVERAGE
5		8.716	9.860	44.030	53.890	-10.110	64.000	AVERAGE
6	*	23.129	9.970	51.160	61.130	-2.870	64.000	AVERAGE

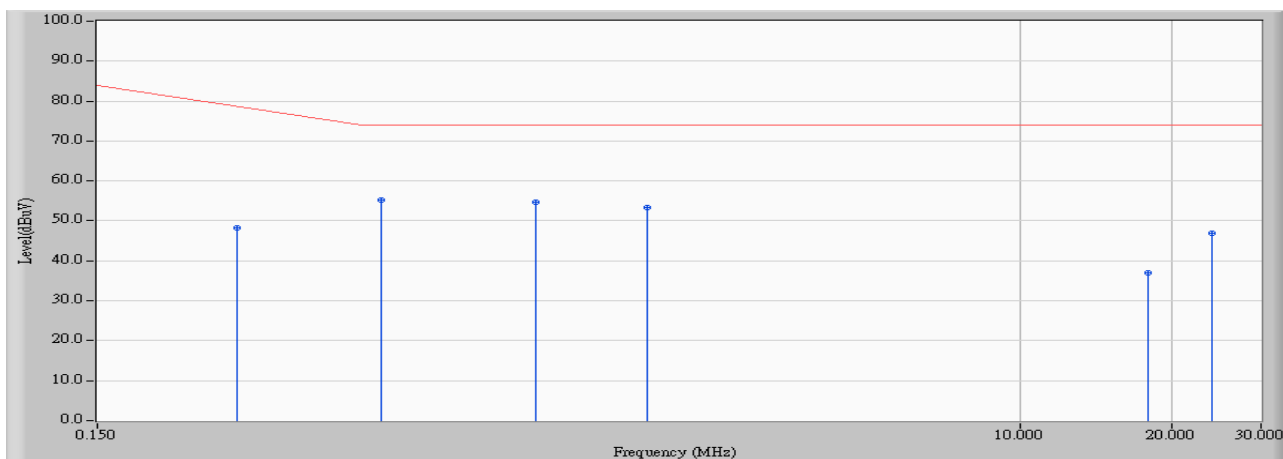
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 12:53
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 3, Telecom



Site : SR-1	Time : 2008/04/26 - 12:54
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 3, Telecom



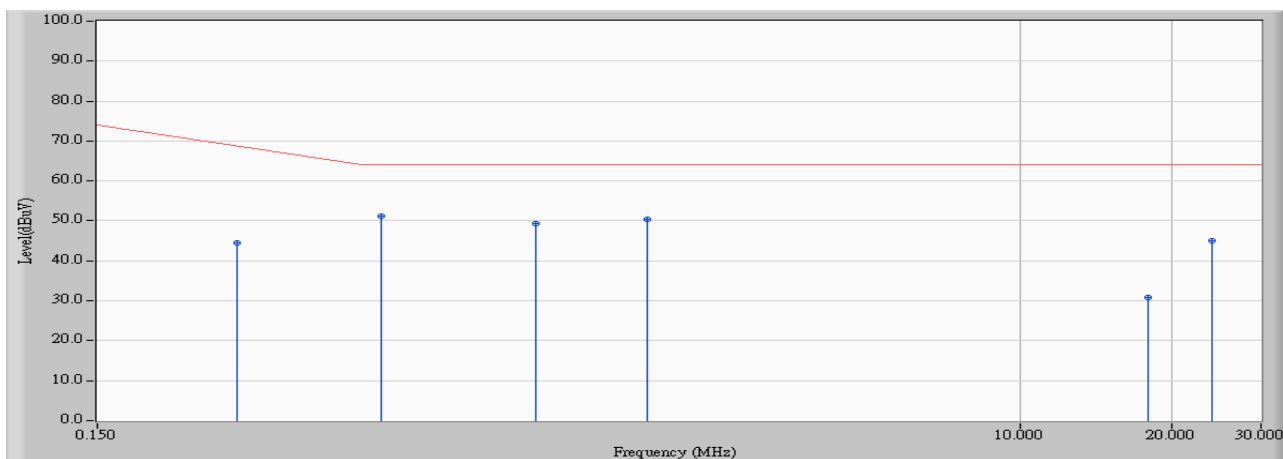
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.283	9.996	38.380	48.376	-31.824	80.200	QUASIPeAK
2	*	0.545	9.950	45.190	55.140	-18.860	74.000	QUASIPeAK
3		1.103	9.930	44.650	54.580	-19.420	74.000	QUASIPeAK
4		1.837	9.920	43.450	53.370	-20.630	74.000	QUASIPeAK
5		17.904	10.050	26.890	36.940	-37.060	74.000	QUASIPeAK
6		24.000	10.040	36.850	46.890	-27.110	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor



Site : SR-1	Time : 2008/04/26 - 12:54
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T2 - Line1
Power : AC 230V/50Hz	Note : Mode 3, Telecom

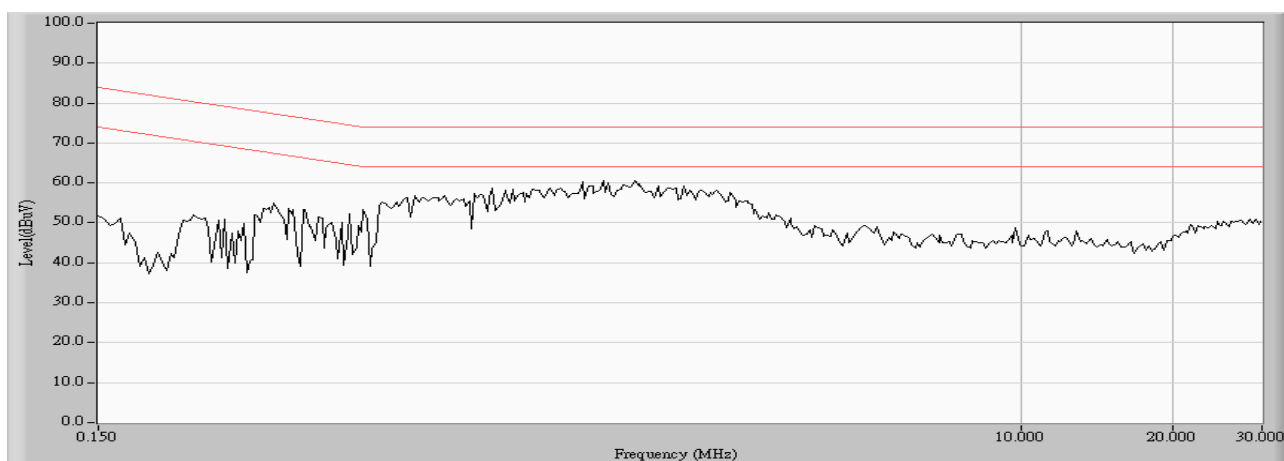


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV)	Margin (dB)	Limit (dBμV)	Detector Type
1		0.283	9.996	34.410	44.406	-25.794	70.200	AVERAGE
2	*	0.545	9.950	41.260	51.210	-12.790	64.000	AVERAGE
3		1.103	9.930	39.290	49.220	-14.780	64.000	AVERAGE
4		1.837	9.920	40.390	50.310	-13.690	64.000	AVERAGE
5		17.904	10.050	20.680	30.730	-33.270	64.000	AVERAGE
6		24.000	10.040	34.880	44.920	-19.080	64.000	AVERAGE

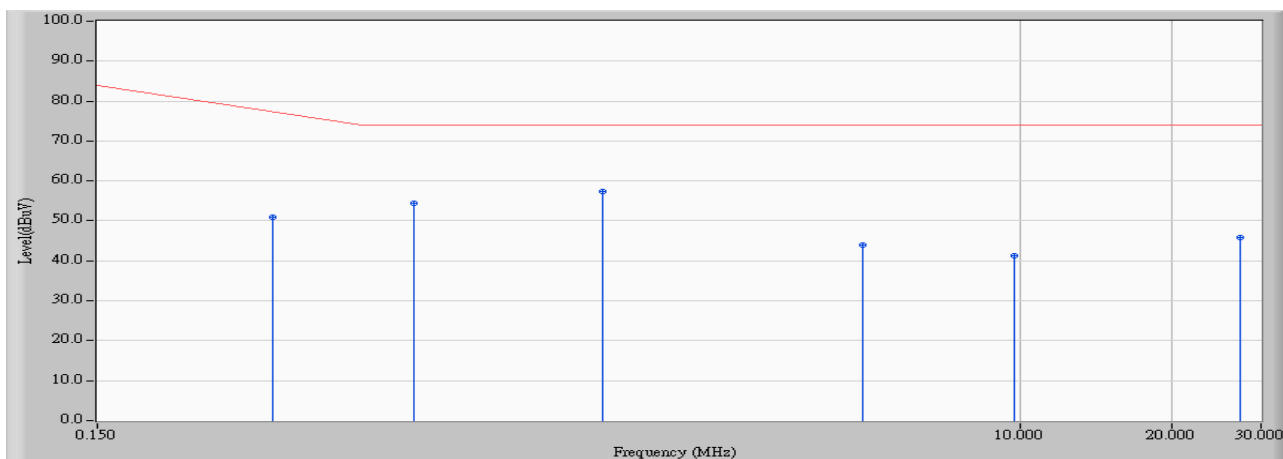
## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 12:15
Limit : ISN_Voltage_B_00M_QP	Margin : 10
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 1G



Site : SR-1	Time : 2008/04/26 - 12:17
Limit : ISN_Voltage_B_00M_QP	Margin : 0
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 1G



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV)	Margin (dB)	Limit (dBμV)	Detector Type
1		0.334	10.148	40.870	51.018	-27.725	78.743	QUASIPeAK
2		0.634	10.090	44.250	54.340	-19.660	74.000	QUASIPeAK
3	*	1.494	10.040	47.280	57.320	-16.680	74.000	QUASIPeAK
4		4.892	9.980	34.110	44.090	-29.910	74.000	QUASIPeAK
5		9.787	9.990	31.190	41.180	-32.820	74.000	QUASIPeAK
6		27.252	10.060	35.750	45.810	-28.190	74.000	QUASIPeAK

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR-1	Time : 2008/04/26 - 12:17
Limit : ISN_Voltage_B_00M_AV	Margin : 0
EUT : Notebook	Probe : ISN-T8 - Line1
Power : AC 230V/50Hz	Note : Mode 3, 1G



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.334	10.148	30.980	41.128	-27.615	68.743	AVERAGE
2		0.634	10.090	31.830	41.920	-22.080	64.000	AVERAGE
3	*	1.494	10.040	38.530	48.570	-15.430	64.000	AVERAGE
4		4.892	9.980	27.940	37.920	-26.080	64.000	AVERAGE
5		9.787	9.990	25.850	35.840	-28.160	64.000	AVERAGE
6		27.252	10.060	30.240	40.300	-23.700	64.000	AVERAGE

## Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

#### 4.7. Test Photograph

Test Mode : Mode 1:

Description : Front View of ISN Test



Test Mode : Mode 1:

Description : Back View of ISN Test



Test Mode : Mode 1:

Description : Front View of ISN Test - Telecom



Test Mode : Mode 1:

Description : Back View of ISN Test - Telecom



Test Mode : Mode 1:

Description : Front View of ISN Test - 1G



Test Mode : Mode 1:

Description : Back View of ISN Test - 1G





Test Mode : Mode 2:

Description : Front View of ISN Test



Test Mode : Mode 2:

Description : Back View of ISN Test





Test Mode : Mode 2:

Description : Front View of ISN Test - Telecom



Test Mode : Mode 2:

Description : Back View of ISN Test - Telecom



Test Mode : Mode 2:

Description : Front View of ISN Test - 1G



Test Mode : Mode 2:

Description : Back View of ISN Test - 1G



Test Mode : Mode 3:

Description : Front View of ISN Test



Test Mode : Mode 3:

Description : Back View of ISN Test





Test Mode : Mode 3:

Description : Front View of ISN Test - Telecom



Test Mode : Mode 3:

Description : Back View of ISN Test - Telecom



Test Mode : Mode 3:

Description : Front View of ISN Test - 1G



Test Mode : Mode 3:

Description : Back View of ISN Test - 1G

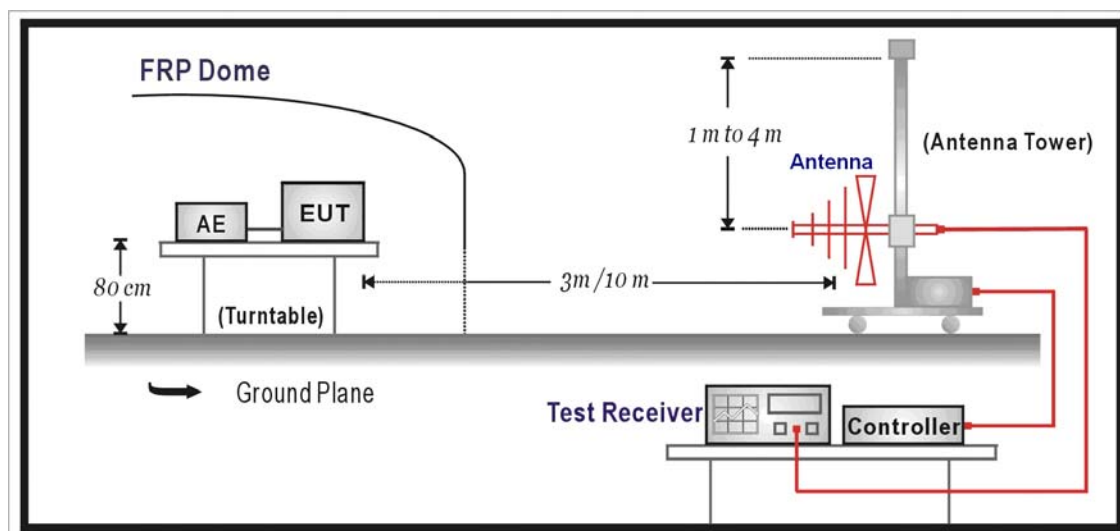


## 5. Radiated Emission

### 5.1. Test Specification

According to EMC Standard : EN 55022

### 5.2. Test Setup



### 5.3. Limit

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 230	10	30
230 – 1000	10	37

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### **5.4. Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

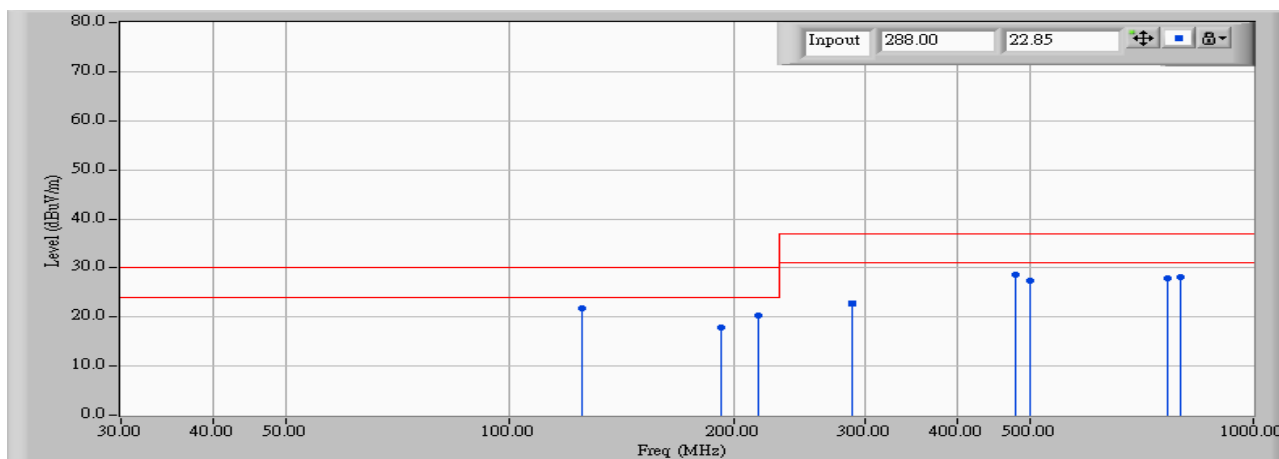
Radiated emissions were investigated over the frequency range from 30MHz to 1GHz using a receiver bandwidth of 120kHz. Radiated was performed at an antenna to EUT distance of 10 meters.

#### **5.5. Deviation from Test Standard**

No deviation.

## 5.6. Test Result

Site : OATS-3	Time : 2008/04/28 - 10:15
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Notebook	Probe : 2007_Site5(2921)_10M - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode 1



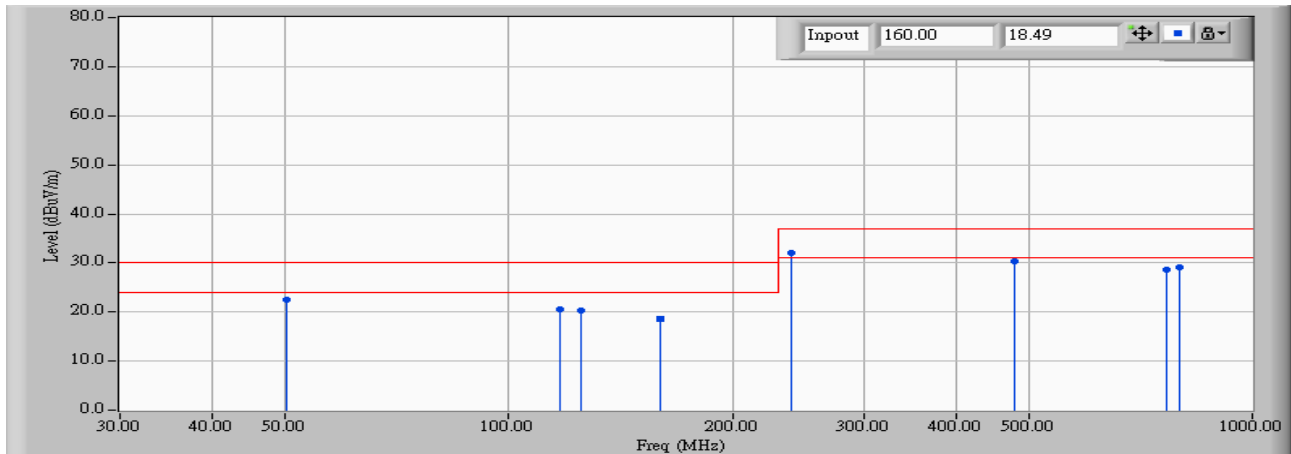
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	125.000	14.041	7.690	21.732	-8.268	30.000	QUASIPeAK
2		192.000	11.603	6.210	17.813	-12.187	30.000	QUASIPeAK
3		216.000	11.660	8.540	20.199	-9.801	30.000	QUASIPeAK
4		288.000	16.668	6.180	22.848	-14.152	37.000	QUASIPeAK
5		480.000	22.668	6.040	28.708	-8.292	37.000	QUASIPeAK
6		500.000	23.073	4.390	27.463	-9.537	37.000	QUASIPeAK
7		766.699	27.235	0.570	27.805	-9.195	37.000	QUASIPeAK
8		800.001	27.499	0.590	28.089	-8.911	37.000	QUASIPeAK

### Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor



Site : OATS-3	Time : 2008/04/28 - 10:38
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Notebook	Probe : 2007_Site5(2921)_10M - VERTICAL
Power : AC 230V/50Hz	Note : Mode 1

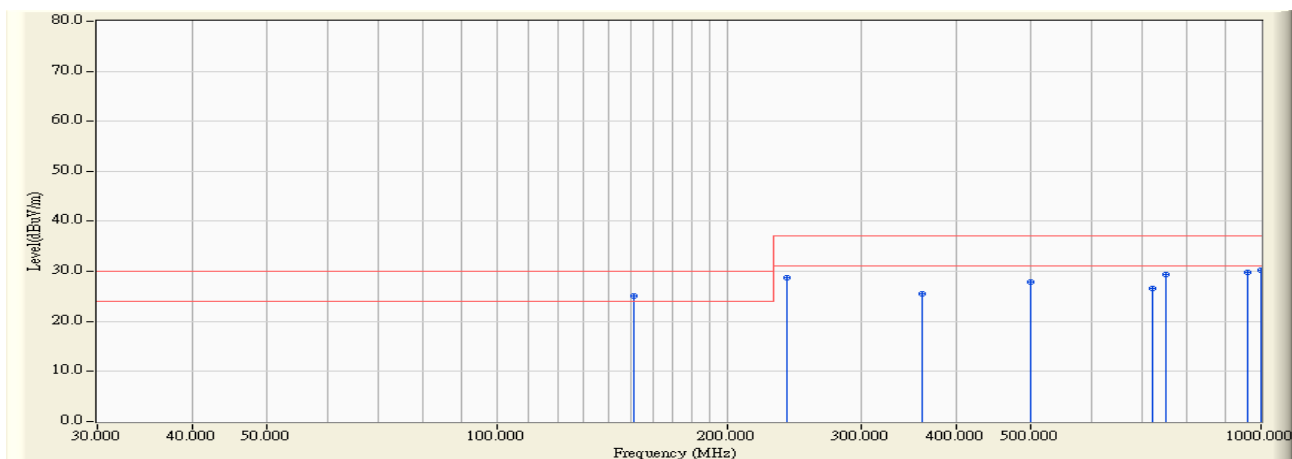


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		50.170	9.172	13.270	22.442	-7.558	30.000	QUASIPeAK
2		116.910	13.801	6.800	20.601	-9.399	30.000	QUASIPeAK
3		125.000	14.041	6.340	20.382	-9.618	30.000	QUASIPeAK
4		160.000	12.401	6.090	18.491	-11.509	30.000	QUASIPeAK
5	*	240.000	14.342	17.670	32.012	-4.988	37.000	QUASIPeAK
6		480.000	22.668	7.590	30.258	-6.742	37.000	QUASIPeAK
7		766.170	27.230	1.420	28.650	-8.350	37.000	QUASIPeAK
8		800.000	27.499	1.720	29.219	-7.781	37.000	QUASIPeAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS-3	Time : 2008/04/02 - 13:37
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Notebook	Probe : 2007_Site4(2921)_10M - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode 2

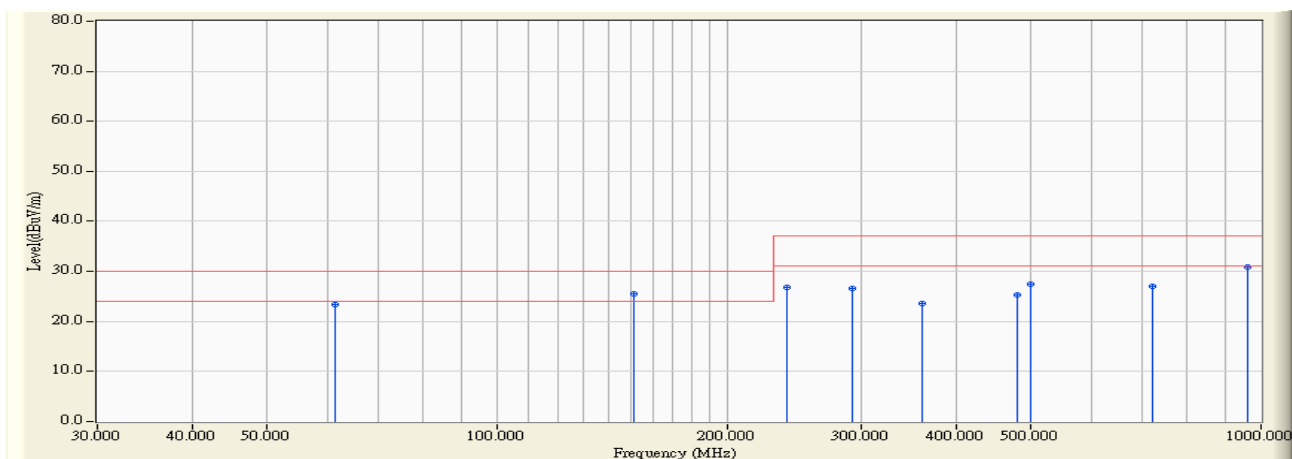


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	150.990	13.724	11.360	25.083	-4.917	30.000	QUASIPeAK
2		240.000	15.385	13.250	28.635	-8.365	37.000	QUASIPeAK
3		360.011	19.136	6.370	25.507	-11.493	37.000	QUASIPeAK
4		500.007	22.081	5.860	27.941	-9.059	37.000	QUASIPeAK
5		720.023	25.420	1.250	26.670	-10.330	37.000	QUASIPeAK
6		750.010	25.780	3.680	29.460	-7.540	37.000	QUASIPeAK
7		960.037	29.044	0.860	29.904	-7.096	37.000	QUASIPeAK
8		1000.000	29.990	0.300	30.290	-6.710	37.000	QUASIPeAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS-3	Time : 2008/04/02 - 14:08
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Notebook	Probe : 2007_Site4(2921)_10M - VERTICAL
Power : AC 230V/50Hz	Note : Mode 2

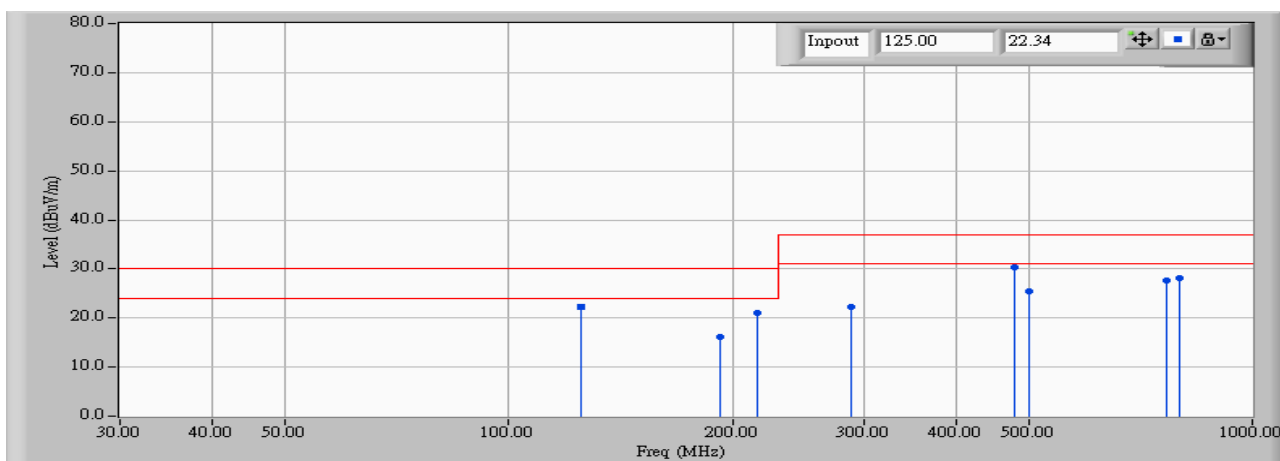


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		61.500	7.857	15.600	23.457	-6.543	30.000	QUASIPeAK
2	*	150.990	13.724	11.700	25.423	-4.577	30.000	QUASIPeAK
3		240.000	15.385	11.350	26.735	-10.265	37.000	QUASIPeAK
4		291.602	17.227	9.340	26.567	-10.433	37.000	QUASIPeAK
5		360.015	19.136	4.370	23.507	-13.493	37.000	QUASIPeAK
6		480.016	21.718	3.670	25.388	-11.612	37.000	QUASIPeAK
7		500.007	22.081	5.380	27.461	-9.539	37.000	QUASIPeAK
8		720.000	25.420	1.520	26.940	-10.060	37.000	QUASIPeAK
9		960.063	29.045	1.760	30.805	-6.195	37.000	QUASIPeAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS-3	Time : 2008/04/25 - 16:32
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Notebook	Probe : 2007_Site5(2921)_10M - HORIZONTAL
Power : AC 230V/50Hz	Note : Mode 3

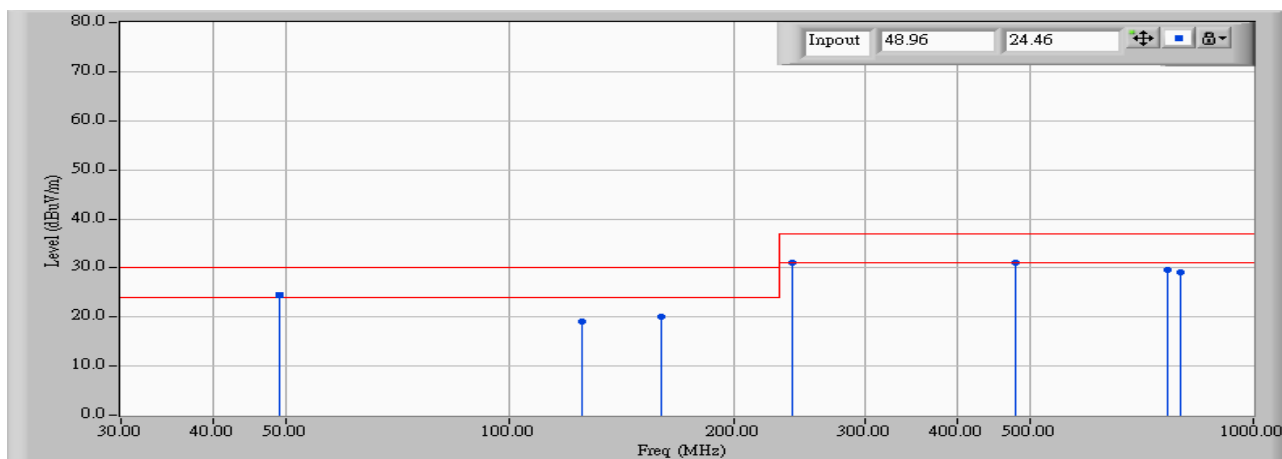


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		125.000	14.041	8.300	22.342	-7.658	30.000	QUASIPeAK
2		192.000	11.603	4.620	16.223	-13.777	30.000	QUASIPeAK
3		216.000	11.660	9.300	20.959	-9.041	30.000	QUASIPeAK
4		288.000	16.668	5.600	22.268	-14.732	37.000	QUASIPeAK
5	*	480.000	22.668	7.600	30.268	-6.732	37.000	QUASIPeAK
6		500.003	23.073	2.390	25.463	-11.537	37.000	QUASIPeAK
7		766.710	27.235	0.300	27.535	-9.465	37.000	QUASIPeAK
8		800.051	27.499	0.650	28.149	-8.851	37.000	QUASIPeAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS-3	Time : 2008/04/25 - 16:02
Limit : CISPR_B_10M_QP	Margin : 6
EUT : Notebook	Probe : 2007_Site5(2921)_10M - VERTICAL
Power : AC 230V/50Hz	Note : Mode 3



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	48.960	9.633	14.830	24.462	-5.538	30.000	QUASIPeAK
2		125.000	14.041	5.090	19.132	-10.868	30.000	QUASIPeAK
3		160.000	12.401	7.670	20.071	-9.929	30.000	QUASIPeAK
4		240.000	14.342	16.800	31.142	-5.858	37.000	QUASIPeAK
5		480.000	22.668	8.300	30.968	-6.032	37.000	QUASIPeAK
6		766.213	27.230	2.300	29.530	-7.470	37.000	QUASIPeAK
7		800.050	27.499	1.680	29.179	-7.821	37.000	QUASIPeAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

**5.7. Test Photograph**

Test Mode : Mode 1:

Description : Front View of Radiated Test



Test Mode : Mode 1:

Description : Back View of Radiated Test



Test Mode : Mode 2:

Description : Front View of Radiated Test



Test Mode : Mode 2:

Description : Back View of Radiated Test





Test Mode : Mode 3:

Description : Front View of Radiated Test



Test Mode : Mode 3:

Description : Back View of Radiated Test



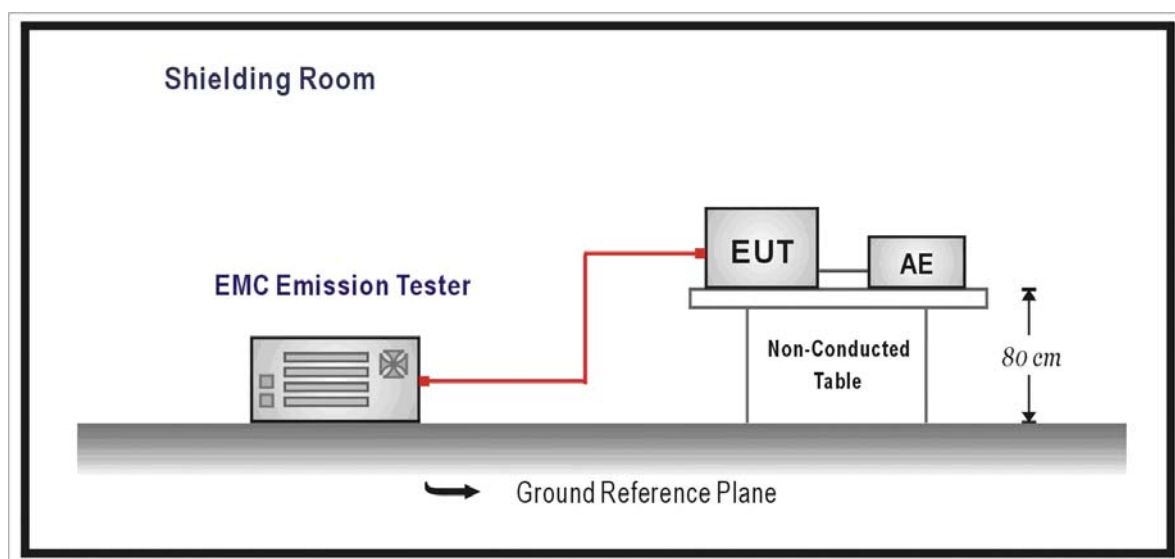


## 6. Harmonic Current Emission

### 6.1. Test Specification

According to EMC Standard : EN 61000-3-2

### 6.2. Test Setup



### 6.3. Limit

(a) Limits of Class A Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current A	Harmonics Order n	Maximum Permissible harmonic current A
Odd harmonics		Even harmonics	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	$8 \leq n \leq 40$	$0.23 * 8/n$
11	0.33		
13	0.21		
$15 \leq n \leq 39$	$0.15 * 15/n$		

(b) Limits of Class B Harmonics Currents

For Class B equipment, the harmonic of the input current shall not exceed the maximum permissible values given in table that is the limit of Class A multiplied by a factor of 1.5.

(c) Limits of Class C Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current Expressed as a percentage of the input current at the fundamental frequency %
2	2
3	$30 \cdot \lambda^*$
5	10
7	7
9	5
$11 \leq n \leq 39$ (odd harmonics only)	3
* $\lambda$ is the circuit power factor	

(d) Limits of Class D Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current per watt mA/W	Maximum Permissible harmonic current A
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
$11 \leq n \leq 39$ (odd harmonics only)	$3.85/n$	See limit of Class A

**6.4. Test Procedure**

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

**6.5. Deviation from Test Standard**

No deviation.

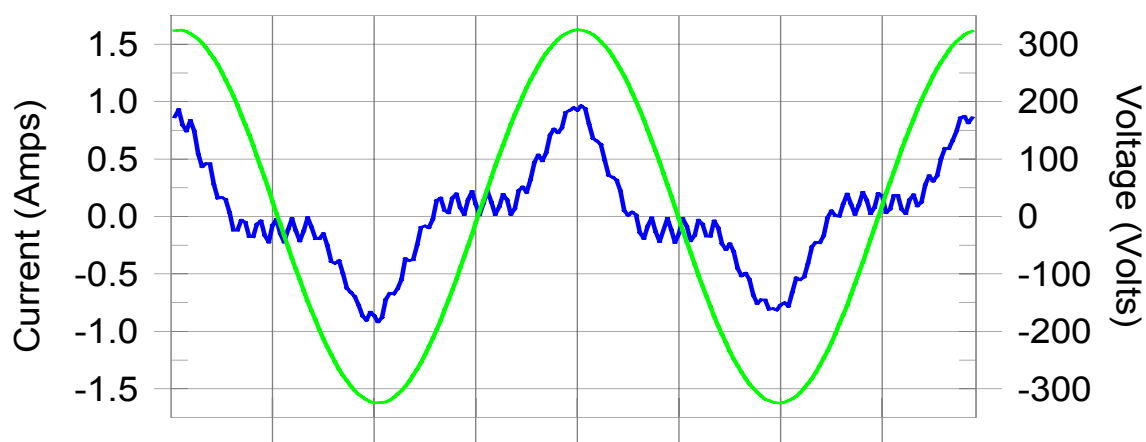
## 6.6. Test Result

Product	Notebook		
Test Item	Power Harmonics		
Test Mode	Mode 1:		
Date of Test	2008/04/07	Test Site	No.3 Shielded Room

Test Result: Pass

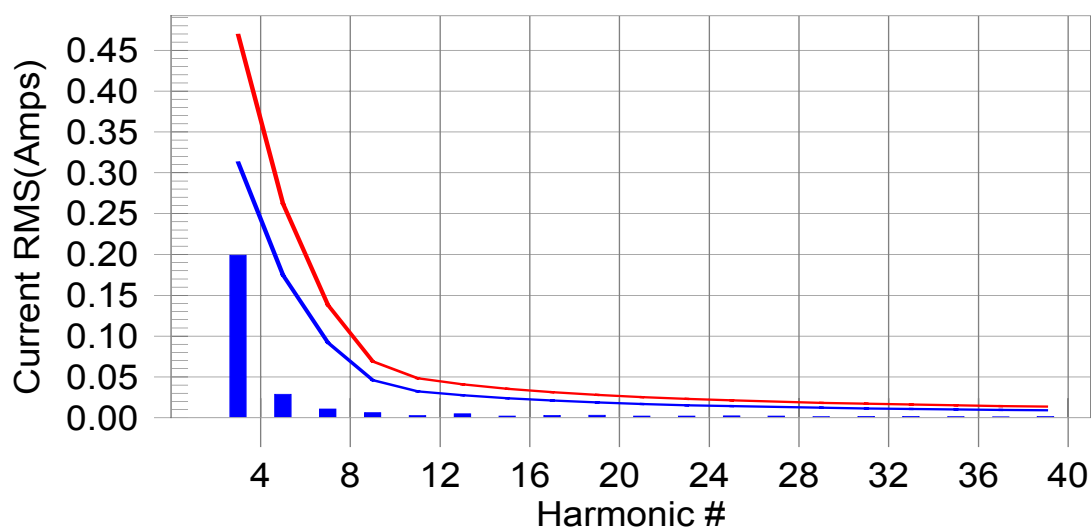
Source qualification: Normal

### Current & voltage waveforms



### Harmonics and Class D limit line

### European Limits



Test result: Pass Worst harmonic was #3 with 42.45% of the limit.

Test Result: Pass Source qualification: Normal  
 THC(A): 0.19 I-THD(%): 49.91 POHC(A): 0.003 POHC Limit(A): 0.040  
 Highest parameter values during test:  
 V\_RMS (Volts): 229.79 Frequency(Hz): 50.00  
 I\_Peak (Amps): 1.069 I\_RMS (Amps): 0.464  
 I\_Fund (Amps): 0.403 Crest Factor: 2.389  
 Power (Watts): 91.9 Power Factor: 0.863

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.000						
3	0.190	0.313	60.8	0.199	0.469	42.45	Pass
4	0.000						
5	0.027	0.175	15.5	0.029	0.262	10.95	Pass
6	0.000						
7	0.010	0.092	10.6	0.011	0.138	7.84	Pass
8	0.000						
9	0.005	0.046	10.2	0.006	0.069	9.09	Pass
10	0.000						
11	0.001	0.032	4.5	0.003	0.048	5.77	Pass
12	0.000						
13	0.004	0.028	14.7	0.005	0.041	12.02	Pass
14	0.000						
15	0.001	0.024	4.3	0.002	0.035	5.89	Pass
16	0.000						
17	0.001	0.021	6.6	0.003	0.031	9.26	Pass
18	0.000						
19	0.002	0.019	8.8	0.003	0.028	11.02	Pass
20	0.000						
21	0.001	0.017	5.8	0.002	0.025	8.10	Pass
22	0.000						
23	0.001	0.015	5.8	0.002	0.023	9.68	Pass
24	0.000						
25	0.001	0.014	9.1	0.002	0.021	10.74	Pass
26	0.000						
27	0.001	0.013	8.2	0.002	0.020	10.13	Pass
28	0.000						
29	0.001	0.012	5.1	0.001	0.018	7.54	Pass
30	0.000						
31	0.001	0.011	6.5	0.002	0.017	10.06	Pass
32	0.000						
33	0.001	0.011	7.2	0.002	0.016	9.94	Pass
34	0.000						
35	0.001	0.010	6.1	0.001	0.015	9.22	Pass
36	0.000						
37	0.000	0.010	5.1	0.001	0.014	7.99	Pass
38	0.000						
39	0.001	0.009	6.6	0.001	0.014	10.41	Pass
40	0.000						

1.Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.

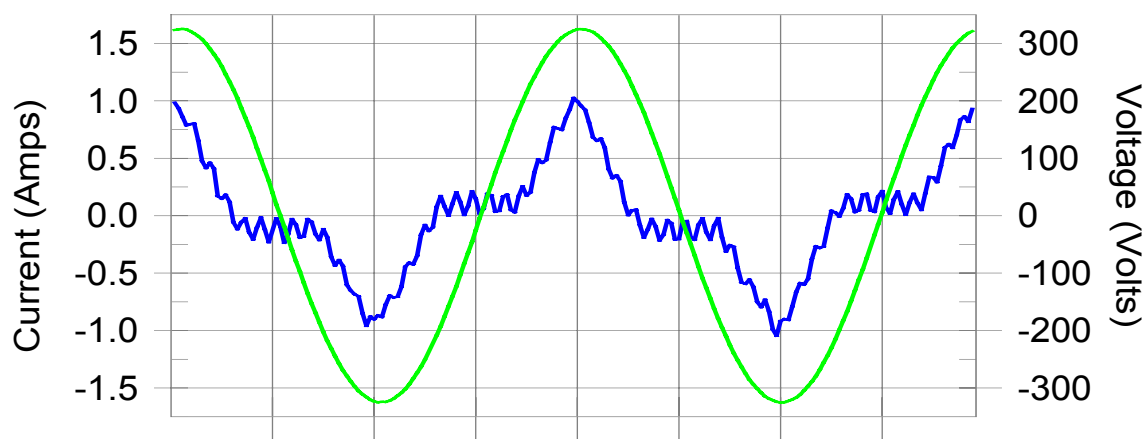
2:According to EN61000-3-2 paragraph 7 the note 1 and 2 are valid for all applications having an active input power >75W. Others the result should be pass.

Product	Notebook		
Test Item	Power Harmonics		
Test Mode	Mode 2:		
Date of Test	2008/04/07	Test Site	No.3 Shielded Room

Test Result: Pass

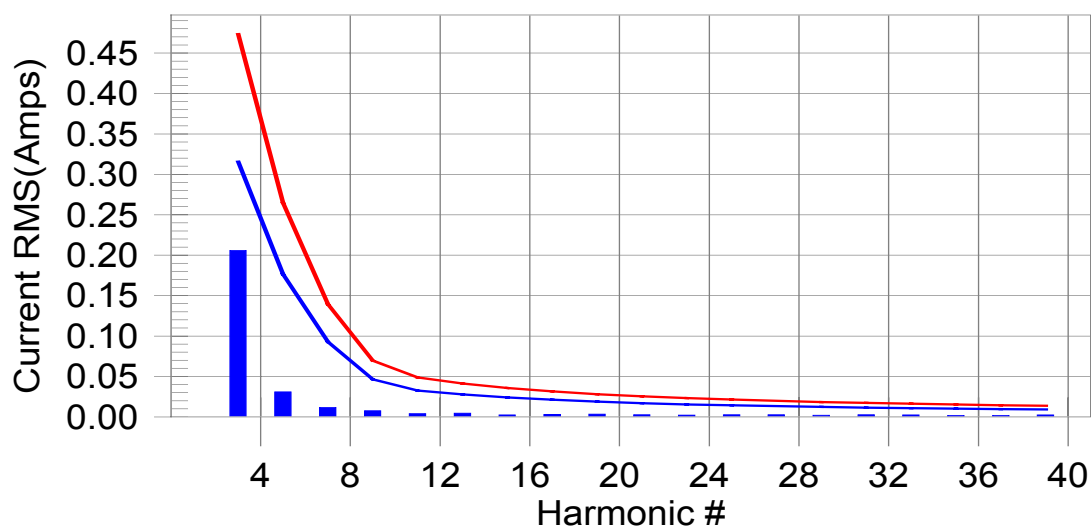
Source qualification: Normal

## Current & voltage waveforms



## Harmonics and Class D limit line

## European Limits



Test result: Pass

Worst harmonic was #3 with 43.52% of the limit.

Test Result: Pass Source qualification: Normal  
 THC(A): 0.21 I-THD(%): 50.21 POHC(A): 0.004 POHC Limit(A): 0.040  
 Highest parameter values during test:  
 V\_RMS (Volts): 229.79 Frequency(Hz): 50.00  
 I\_Peak (Amps): 1.156 I\_RMS (Amps): 0.470  
 I\_Fund (Amps): 0.415 Crest Factor: 2.472  
 Power (Watts): 92.9 Power Factor: 0.862

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.000						
3	0.203	0.316	64.3	0.206	0.474	43.52	Pass
4	0.000						
5	0.029	0.176	16.6	0.031	0.265	11.70	Pass
6	0.000						
7	0.010	0.093	11.1	0.012	0.139	8.47	Pass
8	0.000						
9	0.006	0.046	13.4	0.008	0.070	10.92	Pass
10	0.000						
11	0.003	0.033	8.7	0.004	0.049	8.27	Pass
12	0.000						
13	0.004	0.028	13.5	0.005	0.041	11.66	Pass
14	0.000						
15	0.001	0.024	5.2	0.002	0.036	6.79	Pass
16	0.000						
17	0.002	0.021	8.2	0.003	0.032	10.22	Pass
18	0.000						
19	0.002	0.019	10.5	0.004	0.028	12.54	Pass
20	0.000						
21	0.001	0.017	8.4	0.003	0.026	10.63	Pass
22	0.000						
23	0.001	0.016	7.9	0.002	0.023	10.32	Pass
24	0.000						
25	0.001	0.014	9.6	0.003	0.021	12.05	Pass
26	0.000						
27	0.001	0.013	9.8	0.003	0.020	13.14	Pass
28	0.000						
29	0.001	0.012	8.1	0.002	0.018	12.21	Pass
30	0.000						
31	0.001	0.012	9.3	0.003	0.017	14.87	Pass
32	0.000						
33	0.001	0.011	9.9	0.002	0.016	15.24	Pass
34	0.000						
35	0.001	0.010	9.1	0.002	0.015	12.63	Pass
36	0.000						
37	0.001	0.010	9.6	0.002	0.014	13.55	Pass
38	0.000						
39	0.001	0.009	12.3	0.002	0.014	17.80	Pass
40	0.000						

1.Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.

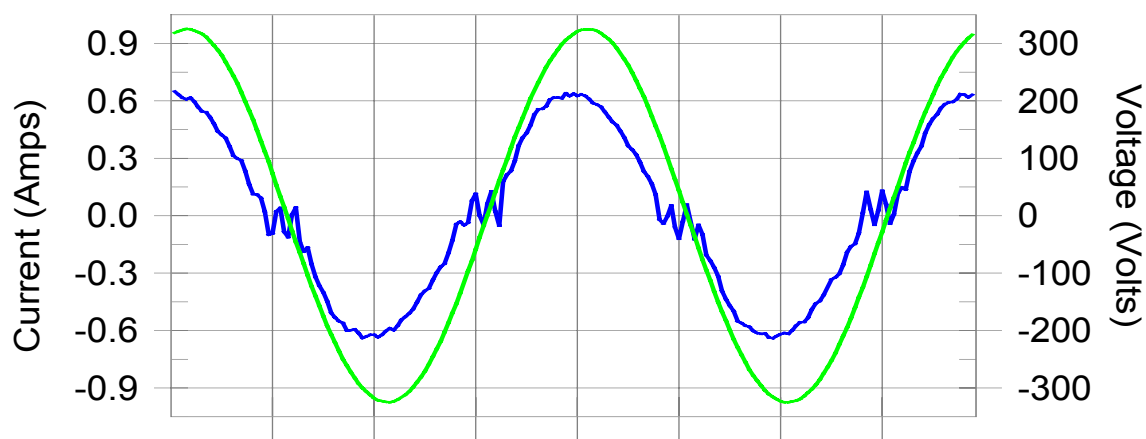
2:According to EN61000-3-2 paragraph 7 the note 1 and 2 are valid for all applications having an active input power >75W. Others the result should be pass.

Product	Notebook		
Test Item	Power Harmonics		
Test Mode	Mode 3:		
Date of Test	2008/04/29	Test Site	No.3 Shielded Room

Test Result: Pass

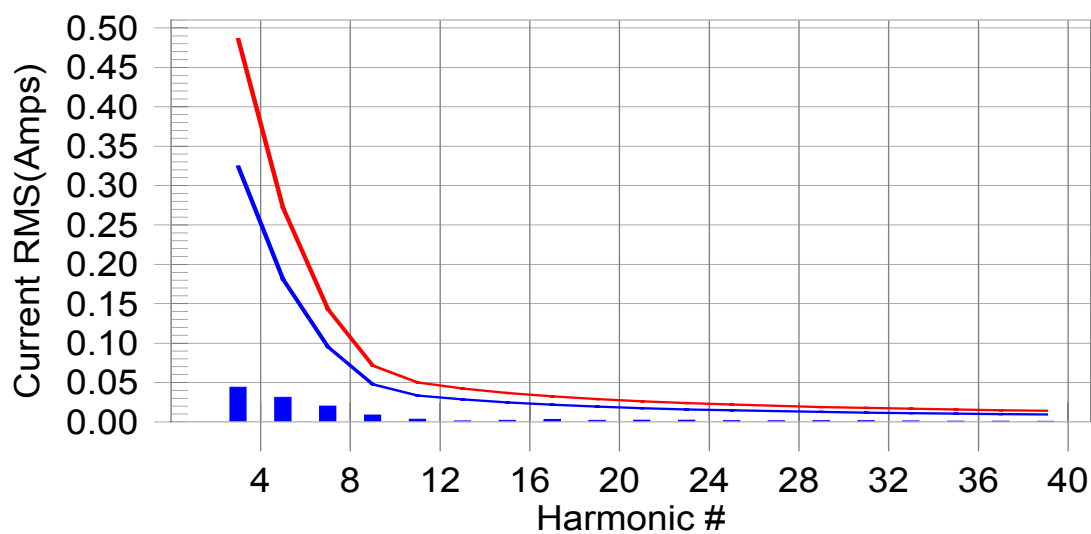
Source qualification: Normal

## Current & voltage waveforms



## Harmonics and Class D limit line

## European Limits



Test result: Pass Worst harmonic was #7 with 14.15% of the limit.



Test Result: Pass Source qualification: Normal  
 THC(A): 0.06 I-THD(%): 13.94 POHC(A): 0.005 POHC Limit(A): 0.041  
 Highest parameter values during test:  
 V\_RMS (Volts): 229.70 Frequency(Hz): 50.00  
 I\_Peak (Amps): 0.657 I\_RMS (Amps): 0.428  
 I\_Fund (Amps): 0.423 Crest Factor: 1.537  
 Power (Watts): 95.4 Power Factor: 0.970

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.000						
3	0.044	0.324	13.5	0.044	0.486	9.10	Pass
4	0.000						
5	0.031	0.181	17.2	0.032	0.272	11.62	Pass
6	0.000						
7	0.020	0.095	20.9	0.020	0.143	14.15	Pass
8	0.000						
9	0.009	0.048	18.2	0.009	0.071	12.39	Pass
10	0.000						
11	0.004	0.033	10.6	0.004	0.050	7.29	Pass
12	0.000						
13	0.001	0.029	4.5	0.001	0.042	3.23	Pass
14	0.000						
15	0.002	0.025	8.8	0.002	0.037	6.16	Pass
16	0.000						
17	0.003	0.022	11.6	0.003	0.032	8.29	Pass
18	0.000						
19	0.002	0.019	11.3	0.002	0.029	7.84	Pass
20	0.000						
21	0.002	0.017	13.1	0.002	0.026	9.26	Pass
22	0.000						
23	0.002	0.016	13.4	0.002	0.024	10.08	Pass
24	0.000						
25	0.001	0.015	8.7	0.002	0.022	7.32	Pass
26	0.000						
27	0.001	0.014	9.4	0.002	0.020	7.85	Pass
28	0.000						
29	0.001	0.013	11.4	0.002	0.019	8.70	Pass
30	0.000						
31	0.001	0.012	12.3	0.002	0.018	9.28	Pass
32	0.000						
33	0.001	0.011	11.3	0.001	0.017	7.93	Pass
34	0.000						
35	0.001	0.010	11.3	0.001	0.016	7.90	Pass
36	0.000						
37	0.001	0.010	10.8	0.001	0.015	7.67	Pass
38	0.000						
39	0.001	0.009	9.9	0.001	0.014	7.21	Pass
40	0.000						

1.Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.

2:According to EN61000-3-2 paragraph 7 the note 1 and 2 are valid for all applications having an active input power >75W. Others the result should be pass.

**6.7. Test Photograph**

Test Mode : Mode 1:

Description : Power Harmonics Test Setup



Test Mode : Mode 2:

Description : Power Harmonics Test Setup



Test Mode : Mode 3:

Description : Power Harmonics Test Setup

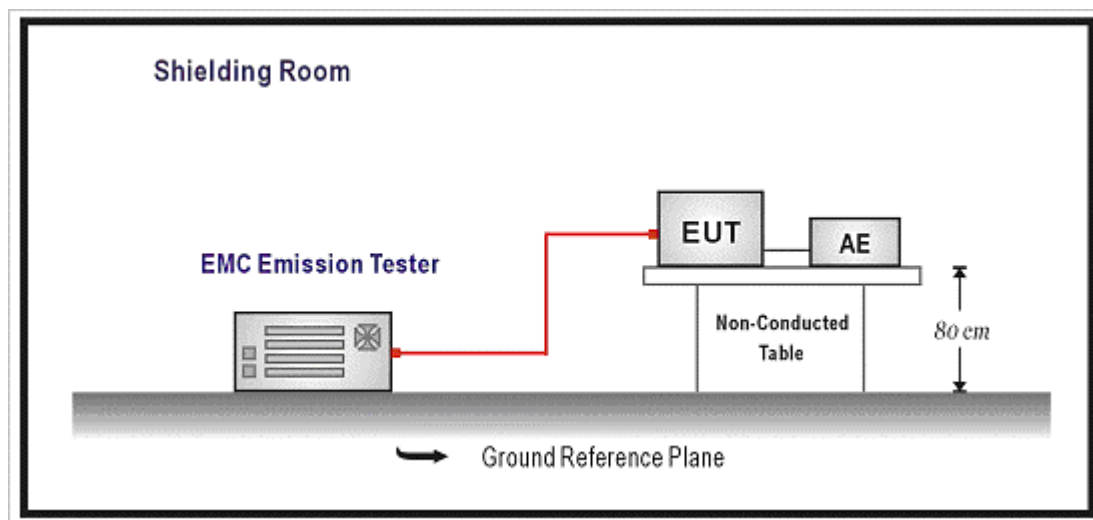


## 7. Voltage Fluctuation and Flicker

### 7.1. Test Specification

According to EMC Standard : EN 61000-3-3

### 7.2. Test Setup



### 7.3. Limit

The following limits apply:

- the value of  $P_{st}$  shall not be greater than 1.0;
  - the value of  $P_{1t}$  shall not be greater than 0.65;
  - the value of  $d(t)$  during a voltage change shall not exceed 3.3 % for more than 500 ms;
  - the relative steady-state voltage change,  $d_c$ , shall not exceed 3.3 %;
  - the maximum relative voltage change,  $d_{max}$ , shall not exceed;
- a) 4 % without additional conditions;
  - b) 6 % for equipment which is:
    - switched manually, or
    - switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

NOTE The cycling frequency will be further limited by the  $P_{st}$  and  $P_{1t}$  limit.

For example: a  $d_{max}$  of 6% producing a rectangular voltage change characteristic twice per hour will give a  $P_{1t}$  of about 0.65.

- c) 7 % for equipment which is:
  - attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
  - switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

$P_{st}$  and  $P_{1t}$  requirements shall not be applied to voltage changes caused by manual switching.

#### 7.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

#### 7.5. Deviation from Test Standard

No deviation.

## 7.6. Test Result

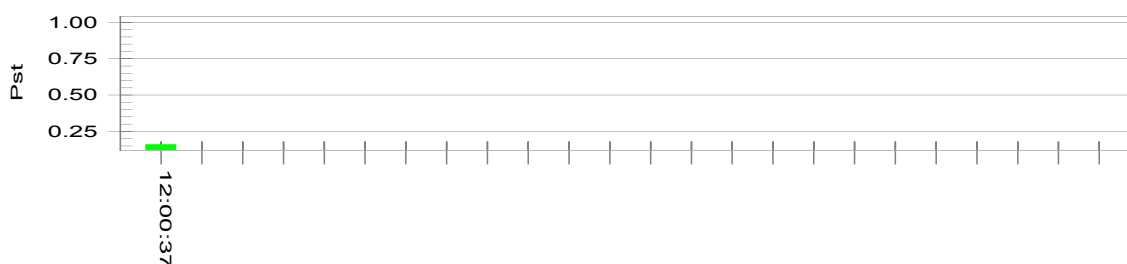
Product	Notebook		
Test Item	Voltage Fluctuation and Flicker		
Test Mode	Mode 1:		
Date of Test	2008/04/07	Test Site	No.3 Shielded Room

Test Result: Pass

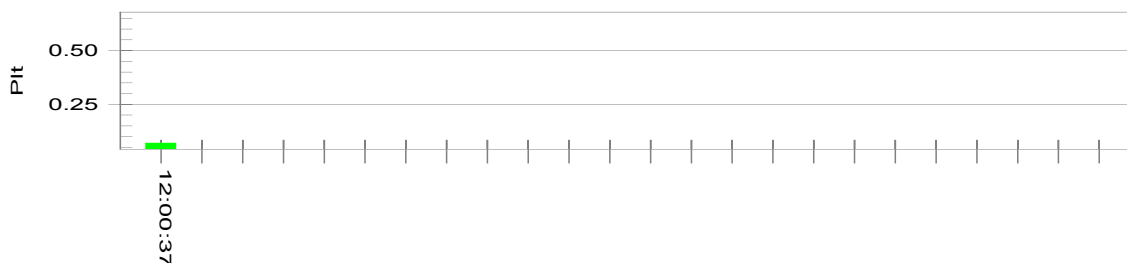
Status: Test Completed

Pst<sub>i</sub> and limit line

European Limits



Plt and limit line



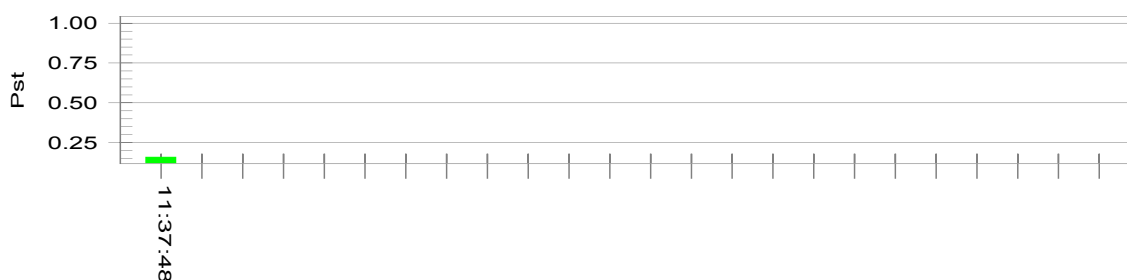
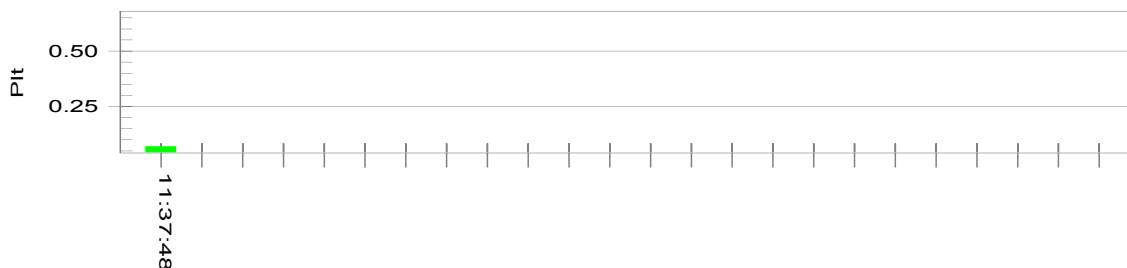
Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.65			
Highest dt (%):	0.00	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.160	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.070	Test limit:	0.650	Pass

Product	Notebook		
Test Item	Voltage Fluctuation and Flicker		
Test Mode	Mode 2:		
Date of Test	2008/04/07	Test Site	No.3 Shielded Room

Test Result: Pass

Status: Test Completed

Pst<sub>i</sub> and limit line
European Limits

Plt and limit line


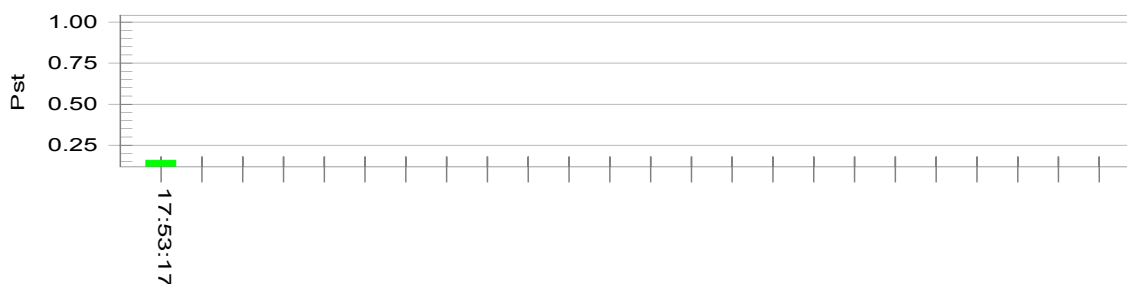
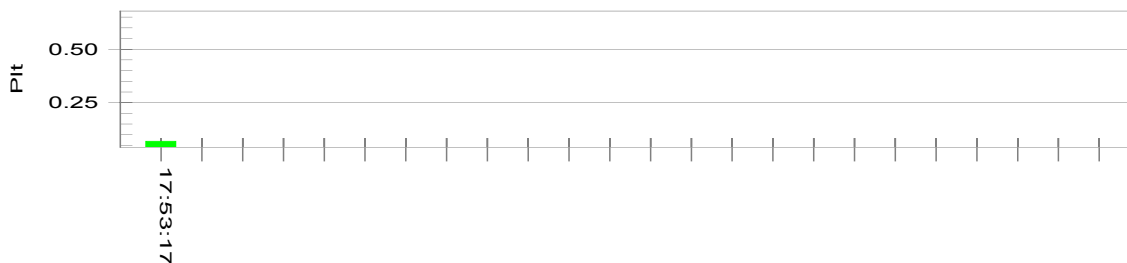
Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.61		
Highest dt (%):	0.00	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.00	Test limit (%):	3.30 Pass
Highest dmax (%):	0.00	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.160	Test limit:	1.000 Pass
Highest Plt (2 hr. period):	0.070	Test limit:	0.650 Pass

Product	Notebook		
Test Item	Voltage Fluctuation and Flicker		
Test Mode	Mode 3:		
Date of Test	2008/04/29	Test Site	No.3 Shielded Room

Test Result: Pass

Status: Test Completed

Pst<sub>i</sub> and limit line
European Limits

Plt and limit line


Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.53		
Highest dt (%):	0.00	Test limit (%):	3.30 Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.00	Test limit (%):	3.30 Pass
Highest dmax (%):	0.00	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.160	Test limit:	1.000 Pass
Highest Plt (2 hr. period):	0.070	Test limit:	0.650 Pass



**7.7. Test Photograph**

Test Mode : Mode 1:

Description : Flicker Test Setup



Test Mode : Mode 2:

Description : Flicker Test Setup



Test Mode : Mode 3:

Description : Flicker Test Setup

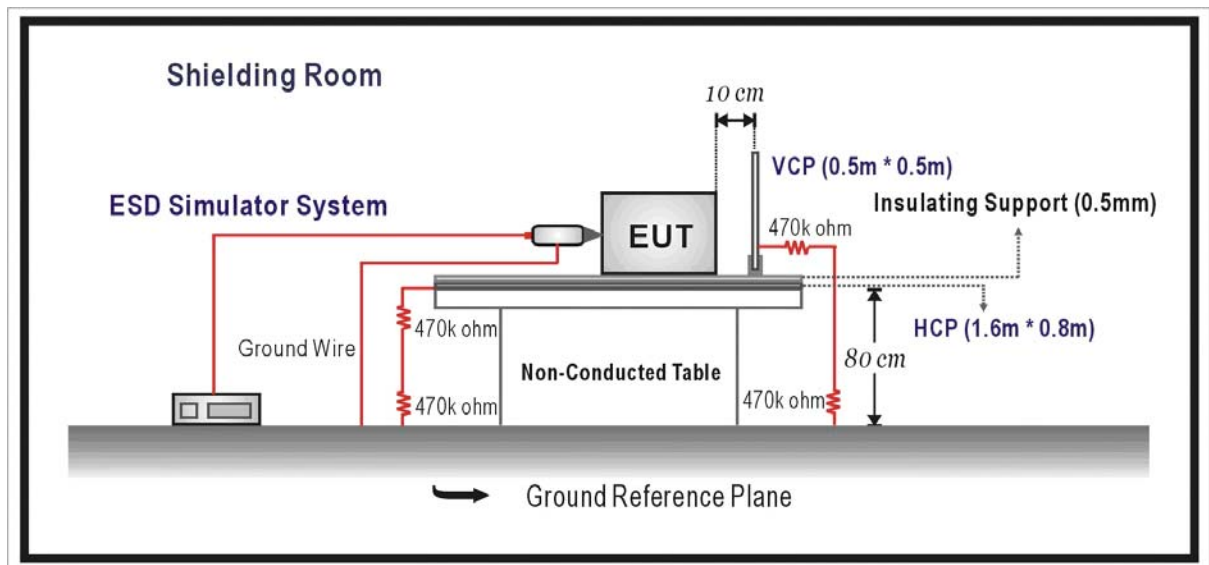


## 8. Electrostatic Discharge

### 8.1. Test Specification

According to Standard : IEC 61000-4-2

### 8.2. Test Setup



### 8.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Electrostatic Discharge	kV(Charge Voltage)	±8 Air Discharge ±4 Contact Discharge	B

#### **8.4. Test Procedure**

Direct application of discharges to the EUT:

Contact discharge was applied only to conductive surfaces of the EUT.

Air discharges were applied only to non-conductive surfaces of the EUT.

During the test, it was performed with single discharges. For the single discharge time between successive single discharges will be keep longer 1 second. It was at least ten single discharges with positive and negative at the same selected point.

The selected point, which was performed with electrostatic discharge, was marked on the red label of the EUT.

Indirect application of discharges to the EUT:

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

#### **8.5. Deviation from Test Standard**

No deviation.

## 8.6. Test Result

Product	Notebook		
Test Item	Electrostatic Discharge		
Test Mode	Mode 1:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Item	Amount of Discharge	Voltage	Required Criteria	Complied To Criteria (A,B,C)	Results
Air Discharge	10	+8kV	B	B	Pass
	10	-8kV	B	B	Pass
Contact Discharge	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (HCP)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Front)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Left)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Back)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Right)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass

### Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

#### NR: No Requirement

- ☒ Meet criteria A: Operate as intended during and after the test
- ☒ Meet criteria B: Operate as intended after the test
- ☐ Meet criteria C: Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - ☒ No false alarms or other malfunctions were observed during or after the test.

### Remark:

The Contact discharges were applied at least total 200 discharges at a minimum of four test points.

Product	Notebook		
Test Item	Electrostatic Discharge		
Test Mode	Mode 2:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Item	Amount of Discharge	Voltage	Required Criteria	Complied To Criteria (A,B,C)	Results
Air Discharge	10	+8kV	B	B	Pass
	10	-8kV	B	B	Pass
Contact Discharge	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (HCP)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Front)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Left)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Back)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Right)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass

#### Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

#### NR: No Requirement

- ☒ Meet criteria A: Operate as intended during and after the test
- ☒ Meet criteria B: Operate as intended after the test
- ☐ Meet criteria C: Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - ☒ No false alarms or other malfunctions were observed during or after the test.

#### Remark:

The Contact discharges were applied at least total 200 discharges at a minimum of four test points.

Product	Notebook		
Test Item	Electrostatic Discharge		
Test Mode	Mode 3:		
Date of Test	2008/05/01	Test Site	No.6 Shielded Room

Item	Amount of Discharge	Voltage	Required Criteria	Complied To Criteria (A,B,C)	Results
Air Discharge	10	+8kV	B	B	Pass
	10	-8kV	B	B	Pass
Contact Discharge	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (HCP)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Front)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Left)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Back)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass
Indirect Discharge (VCP Right)	50	+4kV	B	A	Pass
	50	-4kV	B	A	Pass

#### Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

#### NR: No Requirement

- ☒ Meet criteria A: Operate as intended during and after the test
- ☒ Meet criteria B: Operate as intended after the test
- ☐ Meet criteria C: Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_ kV.
  - ☒ No false alarms or other malfunctions were observed during or after the test.

#### Remark:

The Contact discharges were applied at least total 200 discharges at a minimum of four test points.

**8.7. Test Photograph**

Test Mode : Mode 1:

Description : ESD Test Setup



Test Mode : Mode 2:

Description : ESD Test Setup





Test Mode : Mode 3:

Description : ESD Test Setup

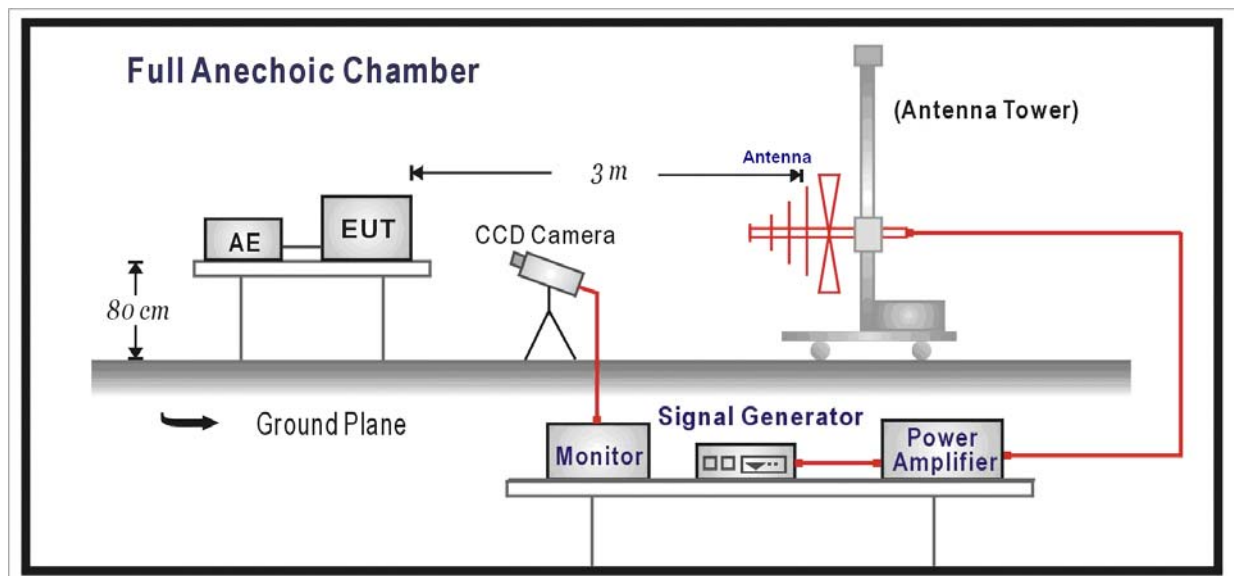


## 9. Radiated Susceptibility

### 9.1. Test Specification

According to Standard : IEC 61000-4-3

### 9.2. Test Setup



### 9.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Radio-Frequency	MHz	80-1000	A
	Electromagnetic Field	V/m(Un-modulated, rms)	3	
	Amplitude Modulated	% AM (1kHz)	80	

#### 9.4. Test Procedure

The EUT and load, which are placed on a table that is 0.8 meter above ground, are placed with one coincident with the calibration plane such that the distance from antenna to the EUT was 3 meters.

Both horizontal and vertical polarization of the antenna and four sides of the EUT are set on measurement.

In order to judge the EUT performance, a CCD camera is used to monitor EUT screen.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m Level 2
2. Radiated Signal	AM 80% Modulated with 1kHz
3. Scanning Frequency	80MHz - 1000MHz
4. Dwell Time	3 Seconds
5. Frequency step size $\Delta f$ :	1%
6. The rate of Swept of Frequency	$1.5 \times 10^{-3}$ decades/s

#### 9.5. Deviation from Test Standard

No deviation.

## 9.6. Test Result

Product	Notebook		
Test Item	Radiated susceptibility		
Test Mode	Mode 1:		
Date of Test	2008/04/07	Test Site	Chamber5

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Required Criteria	Complied To Criteria (A,B,C)	Results
80-1000	FRONT	H	3	A	A	PASS
80-1000	FRONT	V	3	A	A	PASS
80-1000	BACK	H	3	A	A	PASS
80-1000	BACK	V	3	A	A	PASS
80-1000	RIGHT	H	3	A	A	PASS
80-1000	RIGHT	V	3	A	A	PASS
80-1000	LEFT	H	3	A	A	PASS
80-1000	LEFT	V	3	A	A	PASS
80-1000	UP	H	3	A	A	PASS
80-1000	UP	V	3	A	A	PASS
80-1000	DOWN	H	3	A	A	PASS
80-1000	DOWN	V	3	A	A	PASS

### Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A: Operate as intended during and after the test
- ☐ Meet criteria B: Operate as intended after the test
- ☐ Meet criteria C: Loss/Error of function
- ☐ Additional Information
  - ☐ There was no observable degradation in performance.
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ V/m at frequency \_\_\_\_\_ MHz.
- ☒ No false alarms or other malfunctions were observed during or after the test.

Product	Notebook		
Test Item	Radiated susceptibility		
Test Mode	Mode 2:		
Date of Test	2008/04/07	Test Site	Chamber5

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Required Criteria	Complied To Criteria (A,B,C)	Results
80-1000	FRONT	H	3	A	A	PASS
80-1000	FRONT	V	3	A	A	PASS
80-1000	BACK	H	3	A	A	PASS
80-1000	BACK	V	3	A	A	PASS
80-1000	RIGHT	H	3	A	A	PASS
80-1000	RIGHT	V	3	A	A	PASS
80-1000	LEFT	H	3	A	A	PASS
80-1000	LEFT	V	3	A	A	PASS
80-1000	UP	H	3	A	A	PASS
80-1000	UP	V	3	A	A	PASS
80-1000	DOWN	H	3	A	A	PASS
80-1000	DOWN	V	3	A	A	PASS

## Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A: Operate as intended during and after the test
- ☐ Meet criteria B: Operate as intended after the test
- ☐ Meet criteria C: Loss/Error of function
- ☐ Additional Information
  - ☐ There was no observable degradation in performance.
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ V/m at frequency \_\_\_\_\_ MHz.
- ☒ No false alarms or other malfunctions were observed during or after the test.

Product	Notebook		
Test Item	Radiated susceptibility		
Test Mode	Mode 3:		
Date of Test	2008/04/30	Test Site	Chamber5

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Required Criteria	Complied To Criteria (A,B,C)	Results
80-1000	FRONT	H	3	A	A	PASS
80-1000	FRONT	V	3	A	A	PASS
80-1000	BACK	H	3	A	A	PASS
80-1000	BACK	V	3	A	A	PASS
80-1000	RIGHT	H	3	A	A	PASS
80-1000	RIGHT	V	3	A	A	PASS
80-1000	LEFT	H	3	A	A	PASS
80-1000	LEFT	V	3	A	A	PASS
80-1000	UP	H	3	A	A	PASS
80-1000	UP	V	3	A	A	PASS
80-1000	DOWN	H	3	A	A	PASS
80-1000	DOWN	V	3	A	A	PASS

## Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A: Operate as intended during and after the test
- ☐ Meet criteria B: Operate as intended after the test
- ☐ Meet criteria C: Loss/Error of function
- ☐ Additional Information
  - ☐ There was no observable degradation in performance.
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ V/m at frequency \_\_\_\_\_ MHz.
- ☒ No false alarms or other malfunctions were observed during or after the test.

**9.7. Test Photograph**

Test Mode : Mode 1:

Description : Radiated Susceptibility Test Setup



Test Mode : Mode 2:

Description : Radiated Susceptibility Test Setup



Test Mode : Mode 3:

Description : Radiated Susceptibility Test Setup



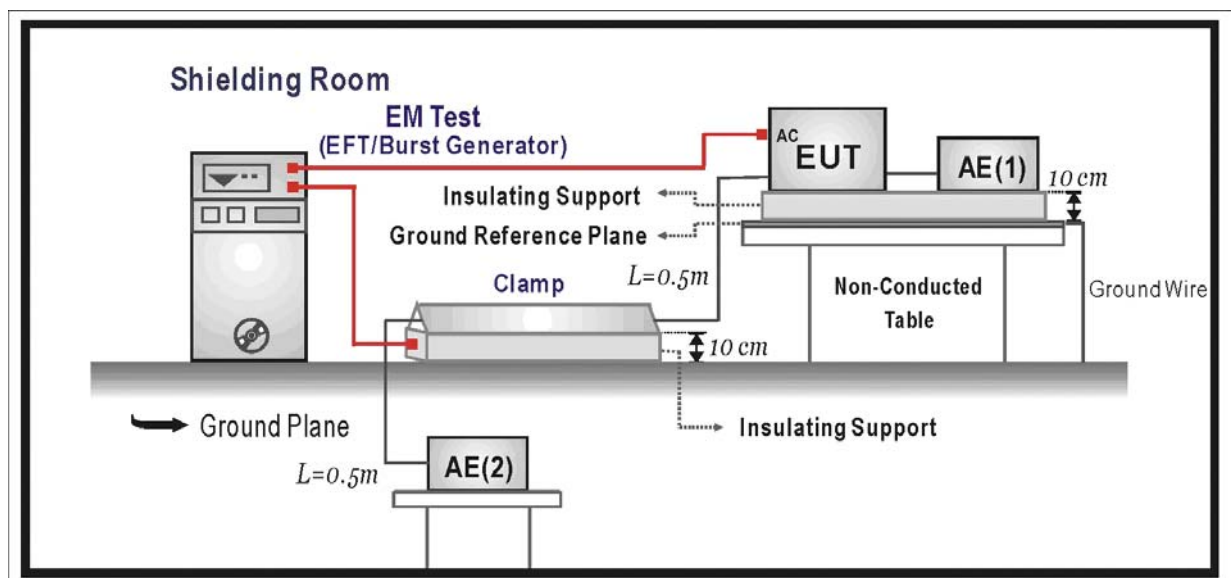


## 10. Electrical Fast Transient/Burst

### 10.1. Test Specification

According to Standard : IEC 61000-4-4

### 10.2. Test Setup



### 10.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
I/O and communication ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	$\pm 0.5$ 5/50 5	B
Input DC Power Ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	$\pm 0.5$ 5/50 5	B
Input AC Power Ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	$\pm 1$ 5/50 5	B

#### **10.4. Test Procedure**

The EUT is placed on a table that is 0.8 meter height. A ground reference plane is placed on the table, and uses a 0.1m insulation between the EUT and ground reference plane.

The minimum area of the ground reference plane is 1m\*1m, and 0.65mm thick min, and projected beyond the EUT by at least 0.1m on all sides.

Test on I/O and communication ports:

The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 1minute.

Test on power supply ports:

The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal.

Each of the Line and Neutral conductors is impressed with burst noise for 1 minute.

The length of the signal and power lines between the coupling device and the EUT is 0.5m.

#### **10.5. Deviation from Test Standard**

No deviation.

## 10.6. Test Result

Product	Notebook		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 1:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L+N	±	1kV	60	Direct	B	A	PASS
L+N+PE	±	1kV	60	Direct	B	A	PASS
LAN1	±	0.5 kV	90	Clamp	B	A	PASS
LAN2	±	0.5 kV	90	Clamp	B	A	PASS
Telecom	±	0.5 kV	90	Clamp	B	A	PASS

### Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A : Operate as intended during and after the test
- ☐ Meet criteria B : Operate as intended after the test
- ☐ Meet criteria C : Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.
- ☒ No false alarms or other malfunctions were observed during or after the test.

Product	Notebook		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 2:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L+N	±	1kV	60	Direct	B	A	PASS
L+N+PE	±	1kV	60	Direct	B	A	PASS
LAN1	±	0.5 kV	90	Clamp	B	A	PASS
LAN2	±	0.5 kV	90	Clamp	B	A	PASS
Telecom	±	0.5 kV	90	Clamp	B	A	PASS

## Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A : Operate as intended during and after the test
- ☐ Meet criteria B : Operate as intended after the test
- ☐ Meet criteria C : Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.
- ☒ No false alarms or other malfunctions were observed during or after the test.

Product	Notebook		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 2:		
Date of Test	2008/04/30	Test Site	No.6 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L+N	±	1kV	60	Direct	B	B	PASS
L+N+PE	±	1kV	60	Direct	B	B	PASS
Telecom	±	0.5 kV	90	Clamp	B	B	PASS

## Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☐ Meet criteria A : Operate as intended during and after the test
- ☒ Meet criteria B : Operate as intended after the test
- ☐ Meet criteria C : Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.
  - ☒ No false alarms or other malfunctions were observed during or after the test.

**10.7. Test Photograph**

Test Mode : Mode 1:

Description : EFT/B Test Setup



Test Mode : Mode 1:

Description : EFT/B Test Setup-Clamp



Test Mode : Mode 2:

Description : EFT/B Test Setup



Test Mode : Mode 2:

Description : EFT/B Test Setup-Clamp





Test Mode : Mode 3:

Description : EFT/B Test Setup



Test Mode : Mode 3:

Description : EFT/B Test Setup-Clamp



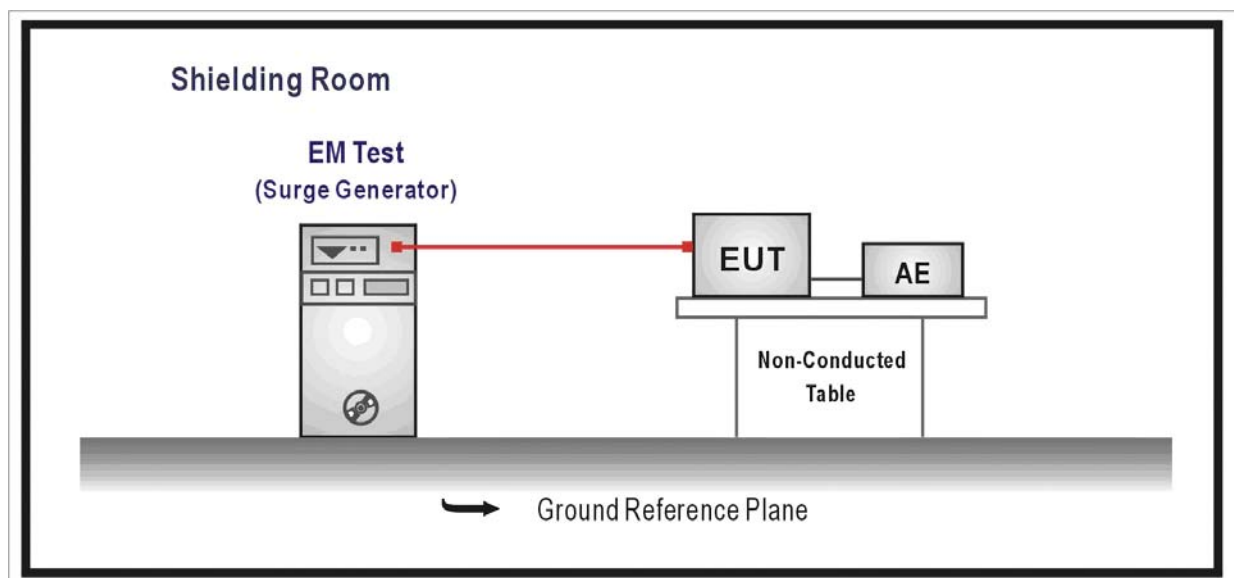


## 11. Surge

### 11.1. Test Specification

According to Standard : IEC 61000-4-5

### 11.2. Test Setup



### 11.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports(See 1) and 2) )				
Surges	Line to Ground	Tr/Th us kV	1.2/50 (8/20) $\pm 1$	B
Input DC Power Ports				
Surges	Line to Ground	Tr/Th us kV	1.2/50 (8/20) $\pm 0.5$	B
AC Input and AC Output Power Ports				
Surges	Line to Line	Tr/Th us kV	1.2/50 (8/20) $\pm 1$	B
	Line to Ground	kV	$\pm 2$	

Notes:

- 1) Applicable only to ports which according to the manufacturer's may directly to outdoor cables.
- 2) Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, no immunity test shall be required.

#### **11.4. Test Procedure**

The EUT and its load are placed on a table that is 0.8 meter above a metal ground plane measured 1m\*1m min. and 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The length of power cord between the coupling device and the EUT shall be 2m or less.

For Input and Output AC Power or DC Input and DC Output Power Ports:

The EUT is connected to the power mains through a coupling device that directly couples the Surge interference signal.

The surge noise shall be applied synchronized to the voltage phase at  $0^{\circ}$ ,  $90^{\circ}$ ,  $180^{\circ}$ ,  $270^{\circ}$  and the peak value of the a.c. voltage wave. (Positive and negative)

Each of Line-Earth and Line-Line is impressed with a sequence of five surge voltages with interval of 1 min.

#### **11.5. Deviation from Test Standard**

No deviation.

## 11.6. Test Result

Product	Notebook		
Test Item	Surge		
Test Mode	Mode 1:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Inject Line	Polarity	Angle	Voltage kV	Time Interval (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L-N	±	0	1kV	60	Direct	B	A	PASS
L-N	±	90	1kV	60	Direct	B	A	PASS
L-N	±	180	1kV	60	Direct	B	A	PASS
L-N	±	270	1kV	60	Direct	B	A	PASS

### Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A : Operate as intended during and after the test

☐ Meet criteria B : Operate as intended after the test

☐ Meet criteria C : Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.

☒ No false alarms or other malfunctions were observed during or after the test.

Product	Notebook		
Test Item	Surge		
Test Mode	Mode 2:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Inject Line	Polarity	Angle	Voltage kV	Time Interval (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L-N	±	0	1kV	60	Direct	B	B	PASS
L-N	±	90	1kV	60	Direct	B	B	PASS
L-N	±	180	1kV	60	Direct	B	B	PASS
L-N	±	270	1kV	60	Direct	B	B	PASS
L-PE	±	0	2kV	60	Direct	B	B	PASS
L-PE	±	90	2kV	60	Direct	B	B	PASS
L-PE	±	180	2kV	60	Direct	B	B	PASS
L-PE	±	270	2kV	60	Direct	B	B	PASS
N-PE	±	0	2kV	60	Direct	B	B	PASS
N-PE	±	90	2kV	60	Direct	B	B	PASS
N-PE	±	180	2kV	60	Direct	B	B	PASS
N-PE	±	270	2kV	60	Direct	B	B	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☐ Meet criteria A : Operate as intended during and after the test
- ☒ Meet criteria B : Operate as intended after the test
- ☐ Meet criteria C : Loss/Error of function
- ☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.

- ☒ No false alarms or other malfunctions were observed during or after the test.

Product	Notebook		
Test Item	Surge		
Test Mode	Mode 3:		
Date of Test	2008/05/01	Test Site	No.6 Shielded Room

Inject Line	Polarity	Angle	Voltage kV	Time Interval (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L-N	±	0	1kV	60	Direct	B	A	PASS
L-N	±	90	1kV	60	Direct	B	A	PASS
L-N	±	180	1kV	60	Direct	B	A	PASS
L-N	±	270	1kV	60	Direct	B	A	PASS
L-PE	±	0	2kV	60	Direct	B	A	PASS
L-PE	±	90	2kV	60	Direct	B	A	PASS
L-PE	±	180	2kV	60	Direct	B	A	PASS
L-PE	±	270	2kV	60	Direct	B	A	PASS
N-PE	±	0	2kV	60	Direct	B	A	PASS
N-PE	±	90	2kV	60	Direct	B	A	PASS
N-PE	±	180	2kV	60	Direct	B	A	PASS
N-PE	±	270	2kV	60	Direct	B	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A : Operate as intended during and after the test

☐ Meet criteria B : Operate as intended after the test

☐ Meet criteria C : Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.

☒ No false alarms or other malfunctions were observed during or after the test.

**11.7. Test Photograph**

Test Mode : Mode 1:

Description : SURGE Test Setup



Test Mode : Mode 2:

Description : SURGE Test Setup



Test Mode : Mode 3:

Description : SURGE Test Setup



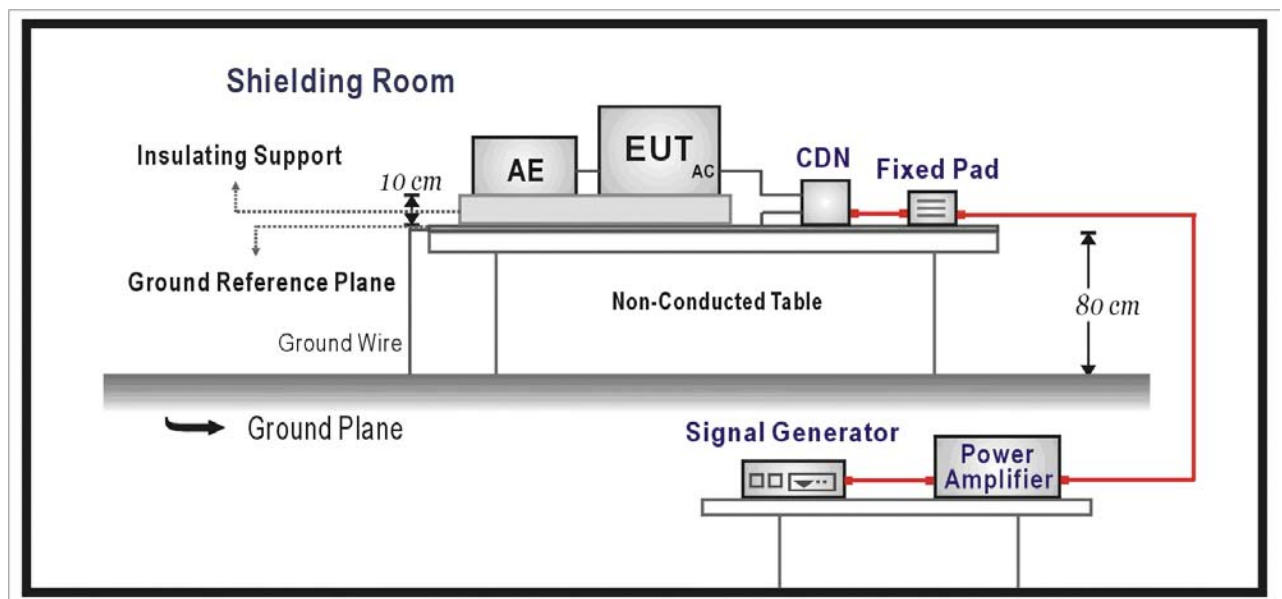
## 12. Conducted Susceptibility

### 12.1. Test Specification

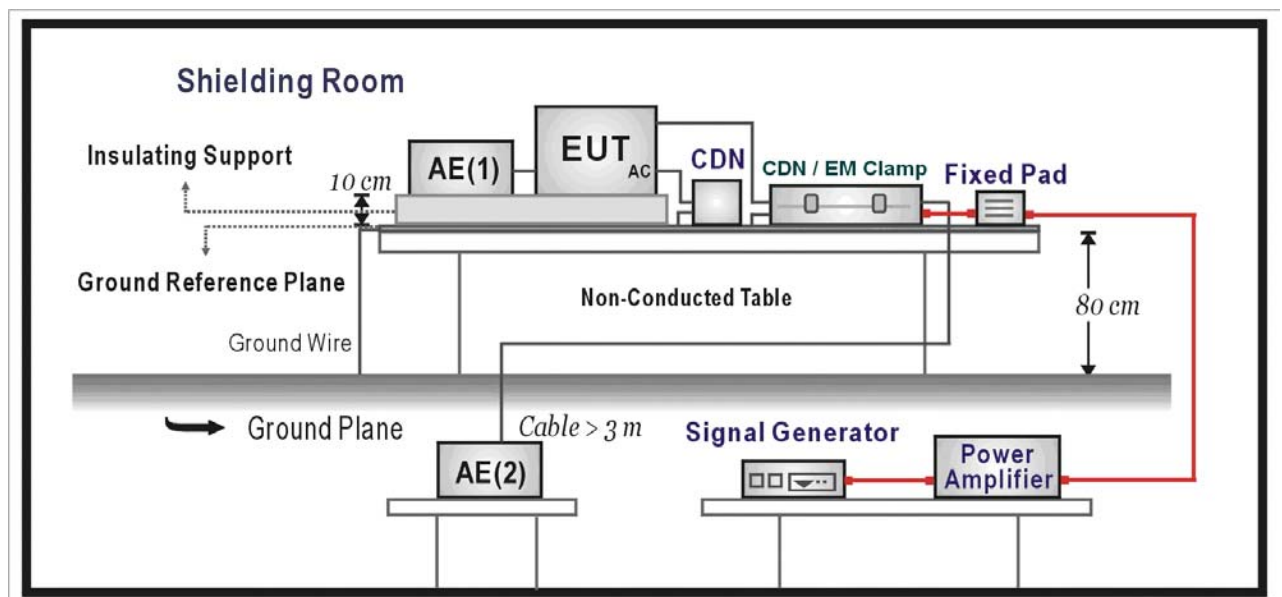
According to Standard : IEC 61000-4-6

### 12.2. Test Setup

#### CDN Test Mode



#### EM Clamp Test Mode





### 12.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A
Input DC Power Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A
Input AC Power Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A

### 12.4. Test Procedure

The EUT are placed on a table that is 0.8 meter height, and a Ground reference plane on the table, EUT are placed upon table and use a 10cm insulation between the EUT and Ground reference plane.

For Signal Ports and Telecommunication Ports

The disturbance signal is through a coupling and decoupling networks (CDN) or EM-clamp device couples to the signal and Telecommunication lines of the EUT.

For Input DC and AC Power Ports

The EUT is connected to the power mains through a coupling and decoupling networks for power supply lines. And directly couples the disturbances signal into EUT.

Used CDN-M2 for two wires or CDN-M3 for three wires.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	130dBuV(3V) Level 2
2. Radiated Signal	AM 80% Modulated with 1kHz
3. Scanning Frequency	0.15MHz – 80MHz
4. Dwell Time	3 Seconds
5. Frequency step size $\Delta f$ :	1%
6. The rate of Swept of Frequency	$1.5 \times 10^{-3}$ decades/s

### 12.5. Deviation from Test Standard

No deviation.

## 12.6. Test Result

Product	Notebook		
Test Item	Conducted susceptibility		
Test Mode	Mode 1:		
Date of Test	2008/04/07	Test Site	No.6 Shielded Room

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Required Criteria	Performance Criteria Complied To	Result
0.15~80	130 (3V)	CDN	AC IN	A	A	PASS
0.15~80	130 (3V)	CDN	100M	A	A	PASS
0.15~80	130 (3V)	CDN	1G	A	A	PASS
0.15~80	130 (3V)	CDN	Telecom	A	A	PASS

### Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A : Operate as intended during and after the test
- ☐ Meet criteria B : Operate as intended after the test
- ☐ Meet criteria C : Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_ dBuV(V) at frequency \_\_\_\_MHz.
  - ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

Product	Notebook		
Test Item	Conducted susceptibility		
Test Mode	Mode 2:		
Date of Test	2008/04/07	Test Site	No.6 Shielded Room

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Required Criteria	Performance Criteria Complied To	Result
0.15~80	130 (3V)	CDN	AC IN	A	A	PASS
0.15~80	130 (3V)	CDN	100M	A	A	PASS
0.15~80	130 (3V)	CDN	1G	A	A	PASS
0.15~80	130 (3V)	CDN	Telecom	A	A	PASS

## Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A : Operate as intended during and after the test
- ☐ Meet criteria B : Operate as intended after the test
- ☐ Meet criteria C : Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_ dBuV(V) at frequency \_\_\_\_MHz.
  - ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

Product	Notebook		
Test Item	Conducted susceptibility		
Test Mode	Mode 3:		
Date of Test	2008/04/30	Test Site	No.6 Shielded Room

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Required Criteria	Performance Criteria Complied To	Result
0.15~80	130 (3V)	CDN	AC IN	A	A	PASS

## Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

- ☒ Meet criteria A : Operate as intended during and after the test
- ☐ Meet criteria B : Operate as intended after the test
- ☐ Meet criteria C : Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ dBuV(V) at frequency \_\_\_\_\_MHz.
  - ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

**12.7. Test Photograph**

Test Mode : Mode 1:

Description : Conducted Susceptibility Test Setup



Test Mode : Mode 1:

Description : Conducted Susceptibility Test Setup-CDN



Test Mode : Mode 2:

Description : Conducted Susceptibility Test Setup



Test Mode : Mode 2:

Description : Conducted Susceptibility Test Setup-CDN



Test Mode : Mode 3:

Description : Conducted Susceptibility Test Setup



Test Mode : Mode 3:

Description : Conducted Susceptibility Test Setup-CDN

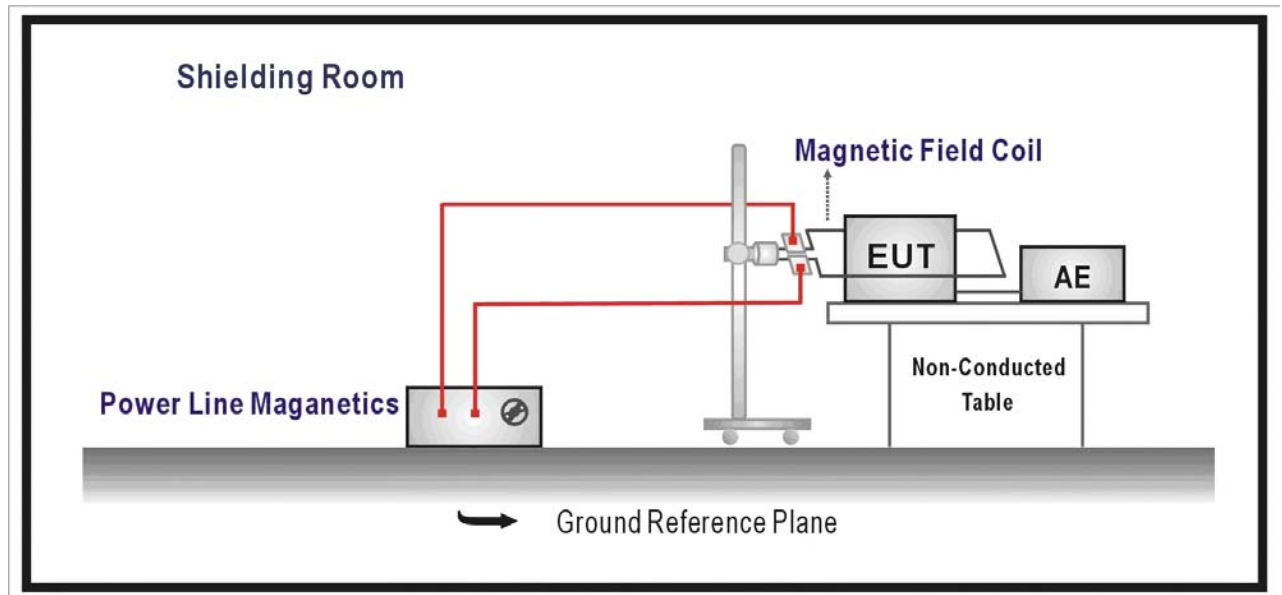


## 13. Power Frequency Magnetic Field

### 13.1. Test Specification

According to Standard : IEC 61000-4-8

### 13.2. Test Setup



### 13.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Power-Frequency Magnetic Field	Hz A/m (r.m.s.)	50 1	A

### 13.4. Test Procedure

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured at least 1m\*1m min. The test magnetic field shall be placed at central of the induction coil.

The test magnetic Field shall be applied 10 minutes by the immersion method to the EUT. And the induction coil shall be rotated by 90° in order to expose the EUT to the test field with different orientation (X, Y, Z Orientations).

### 13.5. Deviation from Test Standard

No deviation.



### 13.6. Test Result

Product	Notebook		
Test Item	Power frequency magnetic field		
Test Mode	Mode 1:		
Date of Test	2008/04/08	Test Site	No.3 Shielded Room

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Required Performance Criteria	Performance Criteria Complied To	Test Result
X Orientation	50	1	A	A	PASS
Y Orientation	50	1	A	A	PASS
Z Orientation	50	1	A	A	PASS

- ☒ Meet criteria A: Operate as intended during and after the test
- ☐ Meet criteria B: Operate as intended after the test
- ☐ Meet criteria C: Loss/Error of function
- ☐ Additional Information
  - ☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.
- ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

Product	Notebook		
Test Item	Power frequency magnetic field		
Test Mode	Mode 2:		
Date of Test	2008/04/08	Test Site	No.3 Shielded Room

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Required Performance Criteria	Performance Criteria Complied To	Test Result
X Orientation	50	1	A	A	PASS
Y Orientation	50	1	A	A	PASS
Z Orientation	50	1	A	A	PASS

- ☒ Meet criteria A: Operate as intended during and after the test  
☐ Meet criteria B: Operate as intended after the test  
☐ Meet criteria C: Loss/Error of function  
☐ Additional Information  
☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.
- ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

Product	Notebook		
Test Item	Power frequency magnetic field		
Test Mode	Mode 3:		
Date of Test	2008/04/28	Test Site	No.3 Shielded Room

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Required Performance Criteria	Performance Criteria Complied To	Test Result
X Orientation	50	1	A	A	PASS
Y Orientation	50	1	A	A	PASS
Z Orientation	50	1	A	A	PASS

- ☒ Meet criteria A: Operate as intended during and after the test  
☐ Meet criteria B: Operate as intended after the test  
☐ Meet criteria C: Loss/Error of function  
☐ Additional Information  
☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.
- ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

### 13.7. Test Photograph

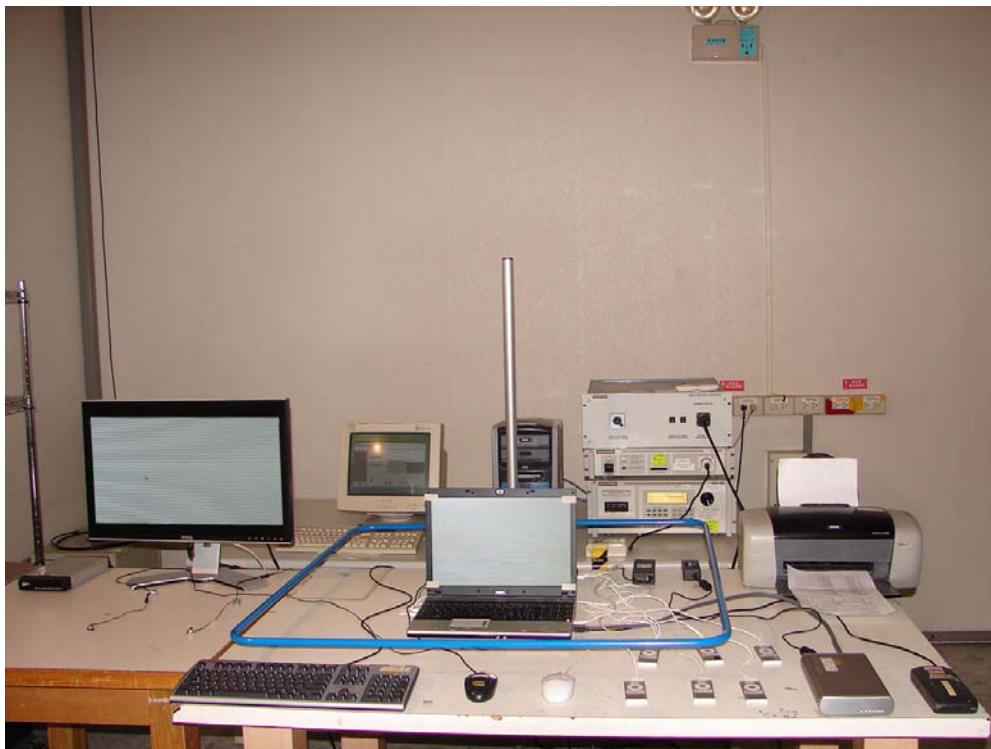
Test Mode : Mode 1:

Description : Power Frequency Magnetic Field Test Setup



Test Mode : Mode 2:

Description : Power Frequency Magnetic Field Test Setup



Test Mode : Mode 3:

Description : Power Frequency Magnetic Field Test Setup

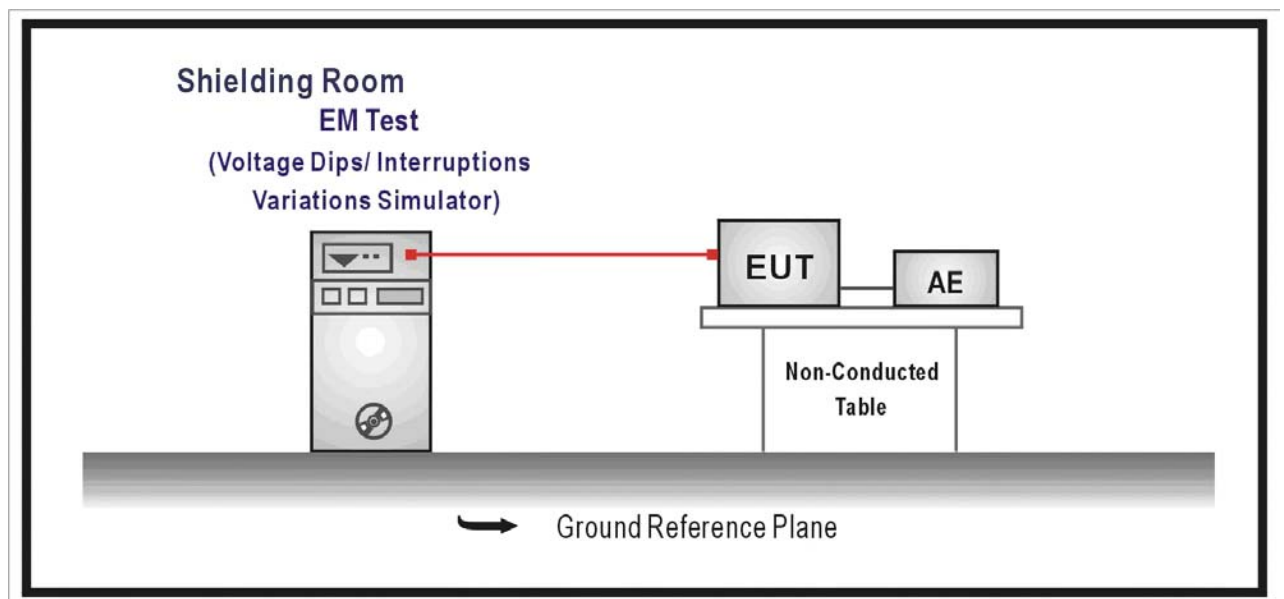


## 14. Voltage Dips and Interruption

### 14.1. Test Specification

According to Standard : IEC 61000-4-11

### 14.2. Test Setup



### 14.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Input AC Power Ports				
Voltage Dips		% Reduction Period	30 25	C
		% Reduction Period	>95 0.5	B
Voltage Interruptions		% Reduction Period	> 95 250	C

#### **14.4. Test Procedure**

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured 1m\*1m min. And 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The power cord shall be used the shortest power cord as specified by the manufacturer.

For Voltage Dips/ Interruptions test:

The selection of test voltage is based on the rated power range. If the operation range is large than 20% of lower power range, both end of specified voltage shall be tested.

Otherwise, the typical voltage specification is selected as test voltage.

The EUT is connected to the power mains through a coupling device that directly couples to the Voltage Dips and Interruption Generator.

The EUT shall be tested for 30% voltage dip of supplied voltage and duration 25 Periods, for 95% voltage dip of supplied voltage and duration 0.5 Periods with a sequence of three voltage dips with intervals of 10 seconds, and for 95% voltage interruption of supplied voltage and duration 250 Periods with a sequence of three voltage interruptions with intervals of 10 seconds.

Voltage phase shifting are shall occur at  $0^{\circ}$ ,  $45^{\circ}$ ,  $90^{\circ}$ ,  $135^{\circ}$ ,  $180^{\circ}$ ,  $225^{\circ}$ ,  $270^{\circ}$ ,  $315^{\circ}$  of the voltage.

#### **14.5. Deviation from Test Standard**

No deviation.

#### 14.6. Test Result

Product	Notebook		
Test Item	Voltage dips and interruption		
Test Mode	Mode 1:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Voltage Dips and Interruption Reduction(%)	Angle	Test Duration (Periods)	Required Performance Criteria	Performance Criteria Complied To	Test Result
30(161V)	0	25	C	A	PASS
30(161V)	45	25	C	A	PASS
30(161V)	90	25	C	A	PASS
30(161V)	135	25	C	A	PASS
30(161V)	180	25	C	A	PASS
30(161V)	225	25	C	A	PASS
30(161V)	270	25	C	A	PASS
30(161V)	315	25	C	A	PASS
>95(0V)	0	0.5	B	A	PASS
>95(0V)	45	0.5	B	A	PASS
>95(0V)	90	0.5	B	A	PASS
>95(0V)	135	0.5	B	A	PASS
>95(0V)	180	0.5	B	A	PASS
>95(0V)	225	0.5	B	A	PASS
>95(0V)	270	0.5	B	A	PASS
>95(0V)	315	0.5	B	A	PASS
>95(0V)	0	250	C	B	PASS
>95(0V)	45	250	C	B	PASS
>95(0V)	90	250	C	B	PASS
>95(0V)	135	250	C	B	PASS
>95(0V)	180	250	C	B	PASS
>95(0V)	225	250	C	B	PASS
>95(0V)	270	250	C	B	PASS
>95(0V)	315	250	C	B	PASS

☒ Meet criteria A: Operate as intended during and after the test

☒ Meet criteria B: Operate as intended after the test

☐ Meet criteria C: Loss/Error of function

☐ Additional Information

☐ The nominal voltage of EUT is 230V.

☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.

☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.



Product	Notebook		
Test Item	Voltage dips and interruption		
Test Mode	Mode 2:		
Date of Test	2008/04/08	Test Site	No.6 Shielded Room

Voltage Dips and Interruption Reduction(%)	Angle	Test Duration (Periods)	Required Performance Criteria	Performance Criteria Complied To	Test Result
30(161V)	0	25	C	A	PASS
30(161V)	45	25	C	A	PASS
30(161V)	90	25	C	A	PASS
30(161V)	135	25	C	A	PASS
30(161V)	180	25	C	A	PASS
30(161V)	225	25	C	A	PASS
30(161V)	270	25	C	A	PASS
30(161V)	315	25	C	A	PASS
>95(0V)	0	0.5	B	A	PASS
>95(0V)	45	0.5	B	A	PASS
>95(0V)	90	0.5	B	A	PASS
>95(0V)	135	0.5	B	A	PASS
>95(0V)	180	0.5	B	A	PASS
>95(0V)	225	0.5	B	A	PASS
>95(0V)	270	0.5	B	A	PASS
>95(0V)	315	0.5	B	A	PASS
>95(0V)	0	250	C	B	PASS
>95(0V)	45	250	C	B	PASS
>95(0V)	90	250	C	B	PASS
>95(0V)	135	250	C	B	PASS
>95(0V)	180	250	C	B	PASS
>95(0V)	225	250	C	B	PASS
>95(0V)	270	250	C	B	PASS
>95(0V)	315	250	C	B	PASS

- ☒ Meet criteria A: Operate as intended during and after the test  
☒ Meet criteria B: Operate as intended after the test  
☐ Meet criteria C: Loss/Error of function  
☐ Additional Information  
☐ The nominal voltage of EUT is 230V.  
☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.  
☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

Product	Notebook		
Test Item	Voltage dips and interruption		
Test Mode	Mode 3:		
Date of Test	2008/04/30	Test Site	No.6 Shielded Room

Voltage Dips and Interruption Reduction(%)	Angle	Test Duration (Periods)	Required Performance Criteria	Performance Criteria Complied To	Test Result
30(161V)	0	25	C	A	PASS
30(161V)	45	25	C	A	PASS
30(161V)	90	25	C	A	PASS
30(161V)	135	25	C	A	PASS
30(161V)	180	25	C	A	PASS
30(161V)	225	25	C	A	PASS
30(161V)	270	25	C	A	PASS
30(161V)	315	25	C	A	PASS
>95(0V)	0	0.5	B	A	PASS
>95(0V)	45	0.5	B	A	PASS
>95(0V)	90	0.5	B	A	PASS
>95(0V)	135	0.5	B	A	PASS
>95(0V)	180	0.5	B	A	PASS
>95(0V)	225	0.5	B	A	PASS
>95(0V)	270	0.5	B	A	PASS
>95(0V)	315	0.5	B	A	PASS
>95(0V)	0	250	C	B	PASS
>95(0V)	45	250	C	B	PASS
>95(0V)	90	250	C	B	PASS
>95(0V)	135	250	C	B	PASS
>95(0V)	180	250	C	B	PASS
>95(0V)	225	250	C	B	PASS
>95(0V)	270	250	C	B	PASS
>95(0V)	315	250	C	B	PASS

☒ Meet criteria A: Operate as intended during and after the test

☒ Meet criteria B: Operate as intended after the test

☐ Meet criteria C: Loss/Error of function

☐ Additional Information

☐ The nominal voltage of EUT is 230V.

☐ EUT stopped operation and could / could not be reset by operator at \_\_\_\_\_ kV of Line \_\_\_\_\_.

☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

**14.7. Test Photograph**

Test Mode : Mode 1:

Description : Voltage Dips Test Setup



Test Mode : Mode 2:

Description : Voltage Dips Test Setup



Test Mode : Mode 1:

Description : Voltage Dips Test Setup



**15. Attachment****➤ EUT Photograph**

(1) EUT Photo



(2) EUT Photo





(3) EUT Photo



(4) EUT Photo



(5) EUT Photo



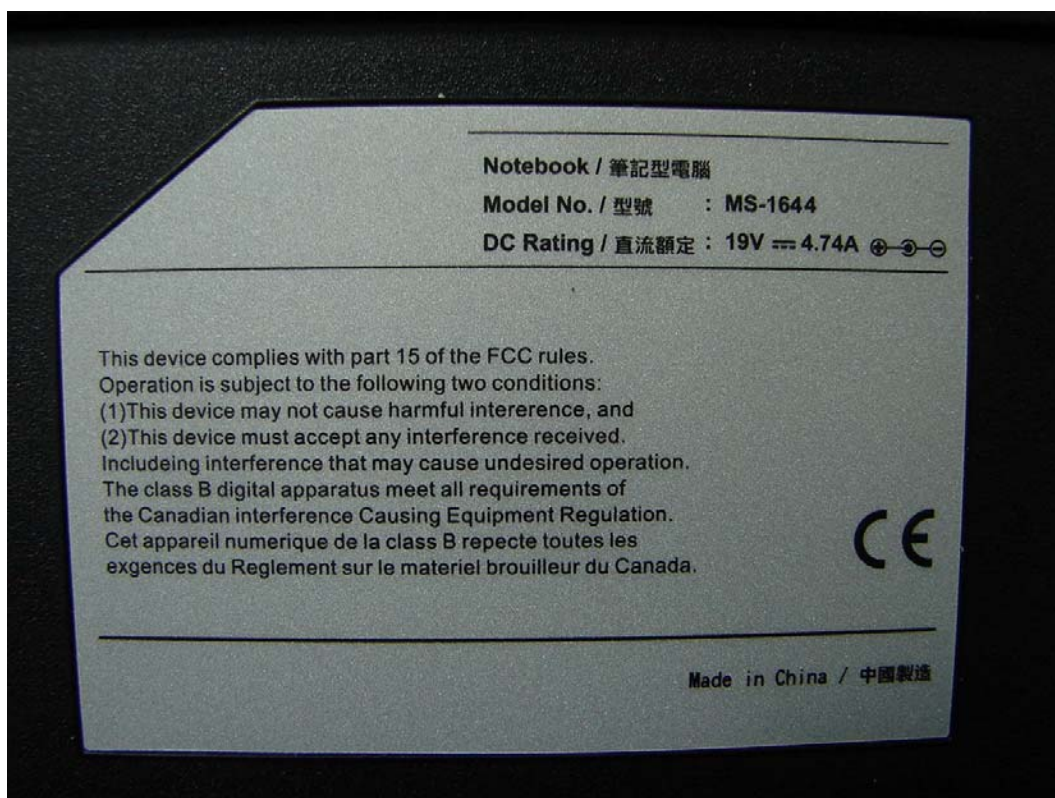
(6) EUT Photo



(7) EUT Photo



(8) EUT Photo





(9) EUT Photo



(10) EUT Photo



(11) EUT Photo



(12) EUT Photo



(13) EUT Photo



(14) EUT Photo





(15) EUT Photo



(16) EUT Photo



(17) EUT Photo



(18) EUT Photo



(19) EUT Photo



(20) EUT Photo





(21) EUT Photo



(22) EUT Photo



(23) EUT Photo



(24) EUT Photo





(25) EUT Photo



(26) EUT Photo



(27) EUT Photo



(28) EUT Photo

